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THE NETHERLANDS AND THE WORLD WAR

STUDIES IN THE WAR HISTORY OF A NEUTRAL

VOLUME II

ECONOMIC AND SOCIAL HISTORY OF THE WORLD WAR

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For List of Editors, Publishers, and Plan of Series see end of this volume.

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VOLUME II

THE MANUFACTURING INDUSTRY
By C. J. P. ZAALBERG
DIRECTOR GENERAL OF THE INSPECTORATE OF LABOR

COMMERCE AND NAVIGATION
By E. P. DeMONCHY, Rz.
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THE HOUSING PROBLEM
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THE COST OF LIVING, PRICES, AND WAGES
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EDITOR'S PREFACE

In the autumn of 1914, when the scientific study of the effects of war upon modern life passed suddenly from theory to history, the Division of Economics and History of the Carnegie Endowment for International Peace proposed to adjust the program of its researches to the new and altered problems which the War presented. The existing program, which had been prepared as the result of a conference of economists held at Berne in 1911, and which dealt with the facts then at hand, had just begun to show the quality of its contributions; but for many reasons it could no longer be followed out. A plan was therefore drawn up at the request of the Director of the Division, in which it was proposed, by means of an historical survey, to attempt to measure the economic cost of the War and the displacement which it was causing in the processes of civilization. Such an "Economic and Social History of the World War," it was felt, if undertaken by men of judicial temper and adequate training, might ultimately, by reason of its scientific obligations to truth, furnish data for the forming of sound public opinion, and thus contribute fundamentally toward the aims of an institution dedicated to the cause of international peace.

The need for such an analysis, conceived and executed in the spirit of historical research, was increasingly obvious as the War developed, releasing complex forces of national life not only for the vast process of destruction, but also for the stimulation of new capacities for production. This new economic activity, which under normal conditions of peace might have been a gain to society, and the surprising capacity exhibited by the belligerent nations for enduring long and increasing loss—often while presenting the outward semblance of new prosperity—made necessary a reconsideration of the whole field of war economics. A double obligation was therefore placed upon the Division of Economics and History. It was obliged to concentrate its work upon the problem thus presented, and to study it as a whole; in other words, to apply to it the tests and disciplines of history. Just as the War itself was a single event, though penetrating by seemingly unconnected ways to the remotest parts of the world, so the analysis of it must be developed

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according to a plan at once all embracing and yet adjustable to the practical limits of the available data.

During the actual progress of the War, however, the execution of this plan for a scientific and objective study of war economics proved impossible in any large and authoritative way. Incidental studies and surveys of portions of the field could be made and were made under the direction of the Division, but it was impossible to undertake a general history for obvious reasons. In the first place, an authoritative statement of the resources of belligerents bore directly on the conduct of armies in the field. The result was to remove as far as possible from scrutiny those data of the economic life of the countries at war which would ordinarily, in time of peace, be readily available for investigation. In addition to this difficulty of consulting documents, collaborators competent to deal with them were for the most part called into national service in the belligerent countries and so were unavailable for research. The plan for a war history was therefore postponed until conditions should arise which would make possible not only access to essential documents, but also the coöperation of economists, historians, and men of affairs in the nations chiefly concerned, whose joint work would not be misunderstood either in purpose or in content.

Upon the termination of the War, the Endowment once more took up the original plan, and it was found with but slight modification to be applicable to the situation. Work was begun in the summer and autumn of 1918. In the first place a final conference of the Advisory Board of Economists of the Division of Economics and History was held in Paris, which limited itself to planning a series of short preliminary surveys of special fields. Since, however, the purely preliminary character of such studies was further emphasized by the fact that they were directed more especially toward those problems which were then fronting Europe as questions of urgency, it was considered best not to treat them as part of the general survey, but rather as of contemporary value in the period of war settlement. It was clear that not only could no general program be laid down *a priori* by this conference as a whole, but that a new and more highly specialized research organization than that already existing would be needed to undertake the Economic and Social History of the War, one based more upon national grounds in the first instance, and less upon purely international coöperation. Until the facts of national history could be ascertained, it would be impossible to proceed with comparative analysis; and the different national histories were themselves of almost baffling intricacy and variety. Consequently the former European Committee of Research was dissolved, and in its place it was decided to erect an Editorial Board in each of the larger countries and to nominate special editors in the smaller ones, who should concentrate, for the present at least, upon their own economic and social war history.

The nomination of these boards by the General Editor was the first step taken in every country where the work has begun. And if any justification were needed for the plan of the Endowment, it at once may be found in the lists of those, distinguished in scholarship or in public affairs, who have accepted the responsibility of editorship. This responsibility is by no means light, involving as it does the adaptation of the general editorial plan to the varying demands of national circumstances or methods of work; and the measure of success attained is due to the generous and earnest coöperation of those in charge in each country.

Once the editorial organization was established there could be little doubt as to the first step which should be taken in each instance toward the actual preparation of the history. Without documents there can be no history. The essential records of the War, local as well as central, have therefore to be preserved and to be made available for research in so far as is compatible with public interest. But this archival task is a very great one, belonging of right to the governments and other owners of historical sources and not to the historian or economist who proposes to use them. It is an obligation of ownership; for all such documents are public trust. The collaborators on this section of the war history, therefore, working within their own field as researchers, could only survey the situation as they found it and report their findings in the forms of guides or manuals; and perhaps, by stimulating a comparison of methods, help to further the adoption of those found to be most practical. In every country, therefore, this was the point of departure for actual work; although special monographs have not been written in every instance.

The first stage of the work upon the war history, dealing with little more than the externals of archives, seemed for a while to exhaust the possibilities of research, and had the plan of the history been limited to research based upon official document, little more could have been done, for once documents have been labeled "secret" few government officials can be found with sufficient courage or initiative to break open the seal. Thus vast masses of source material essential for the historian were effectively placed beyond his reach, although much of it was quite harmless from any point of view. While war conditions thus continued to hamper research, and were likely to do so for many years to come, some alternative had to be found.

Fortunately such an alternative was at hand in the narrative, amply supported by documentary evidence, of those who had played some part in the conduct of affairs during the War, or who, as close observers in privileged positions, were able to record from first or at least second-hand knowledge the economic history of different phases of the Great War, and of its effect upon society. Thus a series of monographs was planned consisting for the most part of unofficial yet authoritative statements, descriptive or historical, which may best be described as about halfway between memoirs and blue-books. These monographs make up the main body of the work assigned so far. They are not limited to contemporary war-time studies; for the economic history of the War must deal with a longer period than that of the actual fighting. It must cover the years of "deflation" as well, at least sufficiently to secure some fairer measure of the economic displacement than is possible in purely contemporary judgments.

With this phase of the work, the editorial problems assumed a new aspect. The series of monographs had to be planned primarily with regard to the availability of contributors, rather than of source material as in the case of most histories; for the contributors themselves controlled the sources. This in turn involved a new attitude toward those two ideals which historians have sought to emphasize, consistency and objectivity. In order to bring out the chief contribution of each writer it was impossible to keep within narrowly logical outlines; facts would have to be repeated in different settings and seen from different angles, and sections included which do not lie within the strict limits of history; and absolute objectivity could not be obtained in every part. Under the stress of controversy or apology, partial views would here and there find their expression. But these views are in some instances an intrinsic part of the history itself, contemporary measurements of facts as significant as the facts with which they deal. Moreover, the work as a whole is planned to furnish its own corrective; and where it does not, others will.

In addition to the monographic treatment of source material, a number of studies by specialists are already in preparation, dealing with technical or limited subjects, historical or statistical. These monographs also partake to some extent of the nature of first-hand material, registering as they do the data of history close enough to the source to permit verification in ways impossible later. But they also belong to that constructive process by which history passes from analysis to synthesis. The process is a long and difficult one, however, and work upon it has only just begun. To quote an apt characterization; in the first stages of a history like this, one is only "picking cotton." The tangled threads of events have still to be woven into the pattern of history; and for this creative and constructive work different plans and organizations may be needed.

In a work which is the product of so complex and varied coöperation as this, it is impossible to indicate in any but a most general way the apportionment of responsibility of editors and authors for the contents of the different monographs. For the plan of the History as a whole and its effective execution the General Editor is responsible; but the arrangement of the detailed programs of study has been largely the work of the different Editorial Boards and divisional Editors, who have also read the manuscripts prepared under their direction. The acceptance of a monograph in this series, however, does not commit the editors to the opinions or conclusions of the authors. Like other editors, they are asked to vouch for the scientific merit, the appropriateness and usefulness of the volumes admitted to the series; but the authors are naturally free to make their individual contributions in their own way. In like manner the publication of the monographs does not commit the Endowment to agreement with any specific conclusions which may be expressed therein. The responsibility of the Endowment is to History itself—an obligation not to avoid but to secure and preserve variant narratives and points of view, in so far as they are essential for the understanding of the War as a whole.

J. T. S.

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I

THE MANUFACTURING INDUSTRY

BY C. J. P. ZAALBERG

I

THE MANUFACTURING INDUSTRY

1. THE MANUFACTURING INDUSTRY OF THE NETHERLANDS

i. *Before the War.*

By the condition of its soil, its situation, and its colonies, the Netherlands is an agricultural, a trading, a seafaring, and an industrial country. The successive censuses show that with the growth of population the portion that finds a livelihood in industry is ever increasing. In husbandry the gain is dependent on the cultivated area and on the degree in which intensive cultivation is put into practice. In either direction advance may still be made, though in a limited degree. In industry the opportunities for expansion are unbounded as long as it is possible to compete with other industrial countries in exporting. The fact that very large manufactories of incandescent lamps and artificial silk have attained high prosperity in a short time, without the Netherlands having any advantage over other countries, proves what energy, ability, and enterprise may bring about, and shows how, with a further augmentation of population, a means of living may be obtained by those who cannot be nourished by produce from their own soil.

As appears from the censuses, there were employed (in round numbers):

	1889	*per cent*	*1899*	*per cent*	*1909*	*per cent*	*1920*	*per cent*
Industry	500,000	11.1	574,000	11.3	790,000	13.5	1,029,000	16.0
Agriculture	525,000	11.5	570,000	11.2	618,000	10.6	626,000	9.1
Trade	127,000	2.8	186,000	3.7	243,000	4.1	272,000	4.0
Traffic	131,000	2.9	136,000	2.7	199,000	3.4	202,000	3.8
Total population	4,511,415	100	5,104,137	100	5,588,175	100	6,865,314	100

Looking more closely at the division of the industrial groups in the last labor census before the War and the first after it, that is, those of December 31, 1909, and December 31, 1920, it appears that of 790,137 and 1,029,000 persons, 170,187 and 191,350 were engaged in the building trades, and that of the remaining part, who have rather to be classed among employees in factories and workshops, the largest numbers were found in the following industries:

	1909	*1920*
Articles of food and luxury	136,158	177,497
Clothing and cleaning	108,320	114,105
Metallurgic industry (including machines and shipbuilding)	106,787	195,682
Textile industry	61,011	66,488
Woodworking, etc.	47,831	54,347
Leather, oilcloth, rubber	37,135	38,423
Earthenware, glass, lime, brick	31,365	35,810
Collieries, peat-diggings	23,102	46,686
Printing offices	20,443	25,550

In these numbers, a considerable place is occupied by the many smaller industries daily supplying the primary needs of life: bakers, butchers, shoemakers, tailors, blacksmiths, carpenters, etc. As to the most important branches of factory industry in the period shortly before the War, *Factories and Workshops*, issued by the Managing Board of Labor and dealing with matters coming under the Factory Acts, records the following in 1912:

	Workmen
Brickworks and roof-tile works	21,445
Potteries	6,160
Glassworks	6,753
Diamond polishing	8,600
Shoe factories	6,231
Engineering works	11,535
Shipbuilding yards	21,432
Incandescent-lamp works	2,848
Enamel works	2,160
Papermills and strawboard factories	5,095
Textile works	54,495
Potato-flour mills	2,162
Dairy products factories	8,670
Margarine works	1,710
Cigar, cigarette, and tobacco factories	21,858
Breweries	2,522
Sugar mills and refineries	10,688
Cocoa and chocolate mills	3,539

The Factory Acts then applied to factories and workshops with ten or more hands, or with a power plant or a furnace.

In all industrial groups together there were in 1912:

19	factories with	more than	1,000 workmen, totaling	29,570
53	factories with	500 to	1,000 workmen, totaling	32,911
539	factories with	100 to	499 workmen, totaling	103,608
834	factories with	50 to	99 workmen, totaling	56,774
1,609	factories with	25 to	49 workmen, totaling	55,326
4,067	factories with	10 to	24 workmen, totaling	61,138

The nineteen factories with more than 1,000 workmen were:

2 potteries
1 glassworks
2 engineering works
4 shipbuilding yards
1 incandescent-lamp works
2 railway workshops
7 cotton-weaving mills, four of which were at the same time spinning mills

The fifty-three factories with 500 to 1,000 workmen were:

2 potteries
5 glassworks
1 candle factory
1 cooperage and box factory
1 shoe factory
5 shipbuilding yards
1 zinc factory
2 enamel works
2 railway workshops
1 arms and munitions factory
2 ready-made clothing factories
1 papermill
12 cotton-weaving mills, three of which were at the same time spinning mills
1 jute weaving and spinning mill
1 calico-printing works
3 gasworks
2 cigar factories
1 yeast and alcohol factory
7 sugar mills
1 sugar refinery
1 cocoa and chocolate mill

Among the five hundred and thirty-nine factories with 100 to 499 workmen were:

Metallurgic industry, including ship and engine building	126
Articles of food and luxury	118*
Textile industry	103
Earthenware, glass, lime, and brick	40
Diamond polishing	23
Paper industry	23
Ready-made clothing factories	18
Shoe factories	8

* Among these were 42 cigar factories, 20 sugar factories, 4 margarine works, 8 cocoa and chocolate mills, 8 dairy products factories.

Thus the factory industry proper consisted mainly of ship and engine building, textile industry, brickworks, glassworks, potteries, cigar factories, diamond-cutting factories, papermills and strawboard factories, shoe factories, ready-made clothing factories, cocoa and chocolate mills, margarine works, and dairy products factories.

Geographically we must distinguish as the most important industrial groups:

Twente: chiefly cotton industry;

the Zaan district: sawmills, oil mills, cocoa mills, flour mills, rice mills;

Tilburg: chiefly wool industry;

Eindhoven and the surrounding country: cotton, wool, linen, cigar, incandescent-lamp industries;

northwestern North Brabant: sugar, leather, and shoe industries;

the banks of the Merwede, North and New Meuse: shipbuilding yards and engineering works;

the peat colonies: potato-flour mills and strawboard factories;

South Limburg: collieries, glass and earthenware industries.

Only a small part of industry of the Netherlands utilizes native raw materials, that is, the brickworks, the dairy products, potato-flour, beetroot, sugar, and strawboard factories. Nearly all the rest is obliged to fall back upon imported raw materials, for example, textile and metallurgic works, cigar factories, diamond-cutting factories, margarine works, and papermills. Shoe and ready-made clothing factories also utilize much imported raw material, while the greater part of the fuel used in manufacturing comes from abroad. The fact that the soil of the Netherlands yields no ores and very little coal, has impeded the metallurgic industry. One zinc factory and one blast furnace, not started until after the War, use imported ores; but only one salt mine furnishes material for industrial pursuits; and the Netherlands also lacks the water power which often calls manufacturing into life. A considerable part of industry is principally concerned with export, and a great deal of the output finds its way to the colonies. No reliable estimate of the value of the import and export trade is on record for the years before the War; but a highly competent contributor to the magazine *In- en Uitvoer* (*Import and Export*) of March 14, 1923, concludes that in 1913 1,138,100 tons of manufactures had been exported, and in 1922

1,276,346 tons (of 1,000 kgs.). Of the latter categories there were 1,900,888 tons in 1913, and 1,826,582 in 1922.

What the severing of connections with the Indies meant to the industry of the Netherlands is shown by the following figures (available only since 1917):

Year	*Import from the East Indies*	*Export to the East Indies*
	(in thousands of guilders)	
1917	100,887	39,173
1918	4,703	10,600
1919	328,935	163,443
1920	239,609	238,797
1921	128,687	190,529
1922	102,372	127,382
1923	114,183	110,851

If one tries to realize that this intercourse had not yet been quite restored after the War, it becomes clear that this entire or partial isolation was in itself very prejudicial to the industry of the Netherlands, and that the slackness in trade in the colonies in 1921 and 1922 made itself keenly felt in the mother country. In the commercial intercourse of the Netherlands with the Indies, export occupies third or fourth place (1923, the fifth place).

A few branches of industry, exporting to the East Indies in a large degree, made the following consignments there in 1920 and 1922:

	1920	*1922*
	(in thousands of guilders)	
Yarns, drygoods, and clothing	101,000	54,331
Factory, agricultural, and power implements and appliances	26,000	13,769
Iron and steel, and objects manufactured of them	23,000	9,313
Paper, stationery, and printed matter	10,500	4,635
Carriages, vehicles (railway material)	9,200	7,285
Medicines, chemical products, dyestuffs, coloring matter	8,800	3,714
Manufactured tobacco (cigars)	8,200	6,477
Butter, cheese, condensed milk	6,300	2,588
Linseed oil	3,600	850

These figures set forth the dependence of many of the industries upon the purchasing power of the East Indies, and one realizes what a grievous blow it was to many of them when intercourse with the colonies was impeded by the War. In many cases, this meant the permanent loss of a former steady market. Since industry in the Netherlands was dependent to a high degree on communications with foreign countries, both for its supplies of raw materials and for the sale of its products, any sudden rupture of connections abroad inevitably resulted in a general dislocation of it. Additional secondary material causes were the difficulties in credit and an augmented call for goods which formerly had been much less in demand, either because they were obtained elsewhere, or because the need for them had been evoked by the War or strongly increased by it. The difficulties experienced in importation and the way in which efforts were made to surmount them has been described in another monograph in this volume.[1] The present study is restricted to the line of conduct taken by industry in connection with them.

ii. *Summary of Conditions from 1914 to 1922.*

The first months of the War, from August to mid-September, 1914, were a period of much anxiety and uncertainty for industry, yet they had no lasting influence on the development of industrial life, though during this period abnormal profits were made, and great losses were sustained. The sudden unemployment in many activities was enormous, and the Royal National Relief Committee was established to alleviate the distress caused by this. The immediate consequences of the state of war for industry were:

(a) calling conscripts to their stations in the mobilization of forces;

(b) withdrawal of credits, or at best only reluctant allowance of them;

(c) lack of raw material, which had to be obtained from abroad;

(d) loss of a foreign outlet;

(e) lack of fuel;

(f) domestic transport difficulties, by holding means of carriage at the disposal of the army;

(g) prohibitions of exportation, that the country might not lose stocks which possibly would soon be required;

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[1] Posthuma, Dr. F. E., "Food Supply and Agriculture."

(h) fear of producing goods in advance, on account of the uncertainty of selling them;

(i) demand for products other than those made in normal times:
  (1) to replace those formerly imported;
  (2) for home defense;
  (3) to supply new wants in foreign countries, where these requirements arose in a similar way as in the Netherlands.

We shall return to this matter in more detail in our discussion of industries. During the weeks following the first period of the sudden and greatest dislocation, in September to October, 1914, a considerable revival was perceptible in manufacturing, though the general condition was still far from satisfactory or reassuring. Great activity was created by the exportation of foodstuffs to belligerent countries, this including *inter alia* live and butchered cattle, conserves, cocoa, dairy produce, sugar, margarine, and potato-flour. Such export of foodstuffs took place chiefly in exchange for coal, so that the danger of a lack of fuel was obviated. Rather satisfactory assistance was given to other export industries: textiles, white glass, sugar, distilleries, strawboard factories, yeast factories, and potteries, while the cigar industry resumed its normal course. In addition to the foodstuffs mentioned, there was likewise an increased export of woolen and cotton blankets in connection with the requirements of the army. A portion of the industrial world received compensation for decreased export by a greater demand from abroad, to replace articles formerly imported, and also in shipments to neutral countries, which had previously been supplied by nations now belligerent. All industries of luxury remained depressed, not only because of their diminished export, but also because of the economy practised at home, this being sorely felt by cabinetmakers, ready-made clothing factories, confectioneries, and the like. Distilleries and bottle factories had in great part to be shut down; grain mills began to experience a shortage of raw materials; and factories making leather shoes had to face great slackness, whereas the demand for wooden shoes strongly increased, partly because of decreased importations from Belgium. The building industry, which at the outbreak of the War had come to a total standstill on account of the withdrawal of credit, recovered a little. There was need of raw material: cement, iron, and piles. The Government tried to relieve the branches of industry hardest hit, by ordering furniture, paper, cotton textiles, and clothing, by granting building credits, and by constructing public works and government buildings.

In many respects conditions gradually improved during November and December, 1914. The textile industry no longer feared a dearth of raw material, and even felt a lack of skilled workmen in consequence of mobilization. Activity was returning in shipbuilding for the merchant marine, including repairs, which had temporarily slackened. On the other hand, the absence of orders from Germany and Belgium caused a shortage of work on river craft. The cigar industry revived, with a lively demand for the cheaper sorts for the army; and there continued to be much business in foodstuffs, such as yeast and margarine, as well as in incandescent lamps, the latter manufacture offering more employment by producing raw material and semi-manufactured articles, which formerly came from abroad. The building industry still showed 25 per cent or more of unemployment; the supply of coal was not yet normal, but did not present a dangerous outlook. Difficulties in credit were chiefly felt by small enterprises. A cheerful improvement was observable in January and February, except in the building trade and the brickyards and timberworks connected with it, and in the diamond, earthenware, bottle, furniture, and carpet industries. The production of globes for incandescent lamps, hydrochloric acid, and acetone increased, and the pharmaceutical industry showed a gain. The clothing industry fully recovered, and even the metallurgic industry experienced a shortage of skilled workmen.

The change for the better continued from April to June, 1915. Only the diamond, earthenware, bottle, and brick industries remained slack, the latter being affected by its connection with the prevailing depression in the building trades. The manufacture of white glass was still flourishing, and that of windowpanes (one factory) very much so, as was also the case with cigars and electric cables. The demand for seagoing vessels was heavy, and thirty-five were sold abroad, while commissions for their speedy replacement were given to domestic yards. On the other hand, it became increasingly difficult to obtain various raw materials and to check the unreasonable inflation of prices. Thus dyestuffs were running short, and a dearth of raw cotton was expected. As a rule contractors were compelled to run great risks and to develop a more intense energy to surmount all kinds of difficulties; but by the coöperation of the parties concerned and by governmental relief several corporations were established to promote the supply and distribution of raw material and fuel, such as the Netherlands Overseas Trust Company and the Industries Commission, the Wool Committee, and the Mutual Coal Reserve Company, originating from the Royal National Relief Committee.

In general, conditions remained favorable in the second half of 1915, though some of the larger enterprises suffered temporarily, while the want of raw materials continued to assume a threatening aspect. The year 1916 wore away without any material disturbance in industrial business life. Manufacturing enjoyed an unprecedented prosperity, and it had been many years since such enormous sums of money had been invested in industrial enterprises. Even the diamond industry (except rose-cutting) was resumed. Building, though in a depressed state, revived, especially by the erection of factories; the lime pits in South Limburg were worked to supply the need of lime; but sawmills suffered from lack of imported timber. The vegetable-drying places assumed enormous proportions. The making of bottles again came to a standstill after a short revival, because the output was declared contraband; and the jute industry met a like fate, while earthenware manufacture still suffered from the inability to export.

In the opening months of 1917, the stability in most branches of industry in some places began to draw to an end in consequence of the stagnation in navigation and the lack of raw material; for this latter reason during the course of the year cotton manufacture nearly reached a deadlock. The wool industry still worked with a limited stock of domestic wool and rags (shoddy), but shipbuilding failed to fulfil the demand through want of iron, and the earthenware and bottle industries declined still further. The makers of margarine could no longer import the requisite raw materials, but the cigar industry enjoyed good sales, and the manufacture of cigarettes gained strongly.

The decline which began everywhere in 1917 gained ground in 1918, so that unemployment was continuously abnormally large; and the dearth of almost all raw materials and coal put a stop to a great part of industry. Moreover, even when prospects became more lively at the approach of peace, orders were not received because a considerable abatement in prices was expected after the peace, and also because the typical war industries came to a stop. Diamond-cutting was still doing well, but the manufacture of cigars was reduced to half its quantity, and the earthenware industry remained unfavorable. The armistice with its consequent demobilization caused a sudden transformation which was surpassed only by the month of August, 1914, in uncertainties and quick transitions. However much the removal of obstacles in traffic at the frontiers and on the ocean and hope of a return of pre-war commercial relations radically wrought a favorable change in the conditions of industrial business, yet many circumstances had a prejudicial influence on a number of industries, and not only impeded the resumption of production, but also caused heavy losses. Factories which, directly or indirectly, worked principally for the needs of the army, saw the possibility of their existence vanish, especially those that supplied foodstuffs to the belligerents on either side; concerns for drying vegetables and potatoes and for scaling mussels, as well as for making conserves and briquettes or for sawing firewood, became superfluous. Great losses were also sustained in factories where the recovery of import and the production abroad led to a considerable lowering of prices, as in the case of cigars; and the industry of wooden shoes was hard hit.

Thus the year 1919 showed a picture of disproportionate and varying conditions in several industries. Yet some improvement could be observed on every side. Earthenware revived to an activity amounting to about 80 per cent of that in 1914; the ready-made clothing industry was certainly 50 per cent higher than in 1914; and the manufacture of rubber articles grew fivefold. In the industrial center on the Zaan, where a number of factories had shut down (timber, oil, rice, cocoa, and flour), hands could again be employed, though the peeling mills remained closed, and the recovery in the cocoa and chocolate industry could not be maintained for long. The brick tileworks fared better than in 1918, and the shoe and leather factories were in full swing; while the textile industry, which had to surmount great difficulties at the outset owing to the want of raw material, now produced the same quantity as before, this being equally true of the cigar and cigarette, strawboard and potato-flour industries. The erection and enlargement of industrial establishments, which had declined heavily after the prosperous year 1916, with its many new war institutions, rose nearly to the level of 1913. The building and electrification of new workshops took first place, especially in the small and middle trades.

Like its predecessor, 1920 at first showed a firm, and even increasing, activity; but about the middle of the year, conditions took the general turn which had already become manifest in some industries. Once begun, the slackness rapidly increased, so that in the last quarter a serious crisis was felt, this being all the worse because there was little prospect of speedy improvement. The causes were manifold and were to be found both at home and abroad. The influence of currency was most obvious. In the autumn of 1919 the depreciation of the franc had already caused the Amsterdam diamond industry to lose much work to Antwerp; the decline of the crown and the mark were to produce results even more grave. In this and the following years, tools, shoes, cigars, clothes, furniture, hardware, drygoods, etc., came in over the eastern and southern frontiers in ever increasing quantities at prices far below the domestic cost of production. The main adverse factor, however, continued to be the lack of purchasing power in eastern and central Europe, while a cessation of the demand for seagoing vessels, as a consequence of an abundant tonnage, contrasted with a general depression in trade and traffic throughout the world, nearly put an end to the highly flourishing shipbuilding industry, its reaction being experienced by many other branches, especially the metallurgic industry. This unfavorable course of business in its turn caused a decrease of consumption in the home country, so that the industries supplying it also slackened more and more. An important factor which brought about a stagnation in production, especially in the closing months of 1920, was the decline of the market for raw material, which created a feeling of hesitation both with consumers and with manufacturers, as well as in the commission business. The complex fluctuations in prices played a leading part in the textile and clothing industries, and also affected the output of shoes.

The industrial depression which set in at the close of 1920 continued until 1924. This year showed a general improvement, but still the general decrease of consumption, which compelled other countries likewise to curtail their production, was complicated in the Netherlands by other factors which oppressed industry fatally. By an indefensible competition in currency on the part of the central countries, which imported many articles at prices amounting to half the cost-price in the Netherlands, a number of activities were brought to a dead stop. The exportation of manufactured products from the Netherlands was hampered by high import duties and interdictions on import in nations which had been regular customers. The cost of production was higher in the Netherlands than in almost any other country in consequence of high wages, high taxes, and social laws, though the latter did not cause the depression, as was frequently asserted, for the crisis had been felt in many industries even before these laws were enacted, and in more than one competing land the pressure of social legislation was equally heavy. With their abnormally strenuous efforts to maintain their industries the manufacturers, indeed, felt the double burden of the statutory eight-hour day and the premium for the disability insurance. We shall deal with the effect of these conditions upon industry during these years when this subject comes under consideration.

Data regarding the prosperity of industry as shown by the number of employees may be gathered from the following statistics applying to factories with twenty-five workmen or more and taken from the Central Returns of the Labor Inspection for 1922 (pp. 328 *seq.*). These do not include the beetroot-sugar factories, which were not then in operation. During the season about 10,000 workmen were employed.

COMPARATIVE SURVEY OF THE NUMBER OF FACTORY HANDS ON MAY 1, 1914, MAY 1, 1916, MAY 1, 1917, MAY 1, 1918, MAY 1, 1919, FEBRUARY 1, 1920, FEBRUARY 1, 1922, AND FEBRUARY 1, 1923, FOR FACTORIES WITH TWENTY-FIVE WORKMEN OR MORE, CLASSIFIED ACCORDING TO BRANCHES OF INDUSTRY

Branch of Industry	*Staff*							
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
GROUP I								
Brickworks, with or without roof tile or floor tile works	16,856	11,931	12,375	13,116	14,120	7,589	11,315	11,209
Roof tile, floor tile, and tile pipe works	1,781	1,447	1,239	1,172	1,429	1,492	1,824	1,648
Earthenware, porcelain, Delft ware, terra cotta factories, and potteries	5,415	4,943	3,651	2,840	2,788	4,505	5,053	5,274
Factories for articles made of cement or concrete, of gypsum slabs, etc.	654	620	536	449	681	398	661	643
Lime-sandstone works	365	263	229	262	263	364	505	470
Lime kilns	98	67	979	629	305	143	137	121
Cement works	34	36	41	57	20	68	..	..
Clay smoking-pipe factories	190	187	185	197	236	201	151	140
Glassworks	7,456	7,712	5,522	4,273	4,382	7,141	4,862	4,641
Factories for working glass	518	465	542	514	491	357	565	514
	33,367	27,671	25,299	23,509	24,715	22,258	25,073	24,660
GROUP II								
Factories for working diamonds	6,144	4,585	6,081	10,677	11,344	11,176	2,341	4,942

Branch of Industry	*Staff*							
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
GROUP III								
Printing offices	10,934	11,045	11,477	11,394	12,059	12,232	12,146	11,481
Chemigraphic-printing houses	301	267	276	268	266	148	176	174
	11,235	11,312	11,753	11,662	12,325	12,380	12,322	11,655
GROUP IV								
Stonecutters yards	387	403	339	390	376	247	305	307
GROUP V								
Oil factories	1,983	3,295	2,936	1,561	2,184	3,536	3,787	3,820
Soapworks (including soap-powder works)	940	1,169	1,374	1,096	1,683	1,690	1,256	1,234
Color mills (including whitelead, zinc-white, dyestuffs, and powder-blue works)	1,277	1,256	1,262	1,036	739	1,021	1,501	1,791
Candle factories	1,107	1,029	890	891	795	913	701	668
Superphosphate factories	1,110	769	796	647	635	557	1,135	1,292
Other artificial fertilizer factories and mills	63	60	46	36	71	194	86	93
Sulphuric acid factories	104	116	162	150	124	209	246	223
Lacquer and ink factories	127	196	186	141	130	256	253	218
Incandescent mantle factories	305	212	78	100	140	84	131	105
Factories for coal tar products	84	108	144	133	110	110	138	113
Asphalt works	72	100	85	78	103	209	260	230
Powdermills and fireworks factories	659	2,188	2,749	3,489	1,292	834	1,054	1,066
Factories for medicines, surgical appliances, dentifrices, and eau de Cologne	571	766	886	723	506	889	1,446	1,400
Match works	691	718	682	531	423	622	500	342

Branch of Industry				Staff				
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
Glue and gelatine works	141	224	253	266	314	314	594	504
Petroleum and benzine distilleries and refineries	162	153	114	131	165	164	159	145
Other chemical factories	551	649	775	905	930	1,224	1,343	1,355
	9,947	13,008	13,418	11,914	10,344	12,826	14,590	14,599
GROUP VI								
Sawmills, carpenter works, wood-creosoting mills, box factories, cooperages, factories for wooden wares and frameworks	9,593	8,479	8,632	8,286	7,382	8,310	9,226	8,514
Cabinetmaking works, chair factories (excluding cane furniture)	4,007	3,790	4,069	3,959	3,755	3,656	3,702	3,543
Factories for bamboo articles, cane furniture, baskets, rush mats, and cork wares	1,062	914	963	1,122	991	939	620	434
Factories for rolling-shutters, and Venetian blinds	166	183	141	205	179	191	243	177
Factories for bone buttons	143	159	204	152	129	153	110	90
Brush and brushwood factories	829	845	693	708	798	679	483	494
Wooden-shoe works	124	153	231	263	275	176	88	91
Straw-wrapper factories	1,253	1,422	1,053	776	425	659	351	412
Comb factories	134	131	114	103	111	106	113	103
Hair-spinning mills	..	..	..	27	19	..	..	..
	17,311	16,076	16,100	15,601	14,064	14,869	14,936	13,858

Branch of Industry				*Staff*				
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
	GROUP VIIa							
Ready-made clothing and linen factories, costumers, tailors, and furriers workshops	12,217	16,310	18,617	18,616	16,217	18,889	19,631	17,639
Collar and cuff factories	241	355	467	484	438	29	631	630
Glove and gaiter factories	3	95	125	294	278	350	243	123
Blanket and quilt factories	259	346	324	256	135	122	436	309
Corset factories	596	855	877	1,097	243	278	130	127
Umbrella factories	340	331	291	136	195	282	206	242
Curtain factories	167	219	244	226	195	287	271	247
Factories for hats and trimmings	679	887	869	870	829	634	748	682
Cap factories	234	235	260	272	219	334	308	273
Military accoutrement factories	74	157	157	147	156	..	154	131
Cloth-button factories	53	120	92	74	101	195	174	90
Embroidery workshops	2	5	50	53	60	79	166	119
Lampshade factories	..	..	..	30	44	82	22	23
	14,865	19,915	22,373	22,555	19,110	21,561	23,120	20,635
	GROUP VIIb							
Laundries	5,721	5,980	5,943	5,497	5,502	4,664	6,116	5,746
Chemical laundries and dyeworks	1,513	1,616	1,653	1,704	1,812	1,092	2,153	2,030
	7,234	7,596	7,596	7,201	7,314	5,756	8,269	7,776

Branch of Industry	May 1, 1914	May 1, 1916	May 1, 1917	Staff May 1, 1918	May 1, 1919	Feb. 1, 1920	Feb. 1, 1922	Feb. 1, 1923
GROUP VIII								
Arts and crafts	222	179	240	237	292	327	223	225
GROUP IX								
Leather (including driving belts) factories	1,128	1,389	1,387	1,490	1,738	1,759	1,551	1,379
Shoe factories (with or without tanneries)	5,974	6,631	6,418	6,439	5,640	6,523	7,053	4,917
Carpet factories	153	210	183	193	200	368	470	572
Rubber factories	279	885	926	1,527	1,606	1,710	1,115	1,153
Leather mat factories	..	30	33	30	2	..	..	..
Saddleries	35	155	103	268	166	45	281	203
Picker works	41	72	50	49	50	67	50	50
Packing material works	41	45	39	35	41	41	48	5
Skindressers works	29	33	26	31	35	31	43	62
	7,680	9,450	9,165	10,062	9,478	10,544	10,611	8,341
GROUP X								
Peat-litter and briquette factories	402	339	325	828	505	471	1,060	1,262
Coke factories	535	48	20	20	22	..	228	548
	937	387	345	848	527	471	1,288	1,810

GROUPS XI, XII, XIII

Branch of Industry				*Staff*				
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
Pewter factories	46	48	53	20	39	52	..	..
Skate and woodworking-plane factories	72	67	90	104	108	123	149	116
Iron foundries	2,134	2,223	2,267	2,340	2,119	2,594	1,949	1,656
Copper mills	36	59	69	67	48	75	32	26
Tinfoil factories (also iron foundries)	153	152	132	113	94	148	151	160
Nut and bolt factories, nails, wire nails, and hinges	1,699	1,702	1,462	1,653	1,601	1,921	1,183	986
Enamel factories (with or without iron foundries)	2,296	2,272	2,181	1,517	1,636	2,077	2,008	2,046
Zincworks	869	651	590	533	388	238	286	622
Factories for metal wares, lamps, gas conduits and shop fittings, and sanitary articles	2,809	2,990	3,270	3,378	3,169	3,879	3,913	3,104
Capsule factories	726	650	421	272	297	500	376	369
Factories for bedsteads and steelwire mattresses	81	119	83	71	73	96	124	137
Tin factories	2,158	2,002	1,833	1,410	1,160	1,827	2,539	2,301
Factories for weavers' combs	47	64	54	37	36	71	70	70
Factories for boiler accessories	404	486	544	456	514	543	491	572
Lead and zinc rolling mills, lead pipe works	195	223	223	182	207	232	265	186
Smithies and construction works	4,241	4,152	3,835	3,432	3,775	4,263	4,404	3,680
Gold and silverware factories	994	1,112	1,192	1,320	1,454	1,483	880	578
Type foundries	182	114	119	106	162	208	152	127
Zinc-coating works	35	33	29	22	27	..	54	55
Electric wire and cable factories	141	181	182	198	259	334	571	546

Branch of Industry	*Staff*							
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
Safe, stove, and lock factories	818	764	811	622	738	840	693	601
Factories for welded sheets and iron pipes	39	68	68	49	65	64	81	80
Horseshoe factories	44	153	76	74	89	57	147	8
Factories and repair shops for steam and other engines (engineering works, etc.)	14,454	15,115	14,567	14,377	14,457	15,276	16,860	15,675
Factories for electric apparatus, repair shops, and electric plants	1,594	2,235	2,011	3,182	3,422	3,363	3,108	3,132
Electric-lamp factories	2,778	5,015	4,772	3,589	4,074	5,333	6,097	7,687
Musical, optical, and measuring instrument factories	493	593	581	642	807	687	526	515
Artillery works	1,121	4,319	3,521	3,689	1,950	719	552	534
Automobile, aircraft, and bicycle factories and repair shops	1,506	1,808	1,698	1,610	1,671	2,296	1,773	1,862
Dockyards (with or without engineering works)	27,537	27,493	26,924	21,391	24,574	31,994	25,496	19,199
Chain factories	77	196	194	157	159	159	85	47
File factories	131	135	135	149	151	151	129	106
Ship-breaking yards and metal-reclaiming shops	387	263	342	314	397	239	456	452
Gas meter factories	817	725	776	811	819	859	567	634
Factories and repair shops for railway and tramway material	7,725	8,291	8,423	8,572	8,341	7,595	8,532	8,381
Cartwrights shops, coachbuilders and carriage shops, wheelwright shops, baby-carriage factories	948	796	821	684	973	1,619	731	644
	79,787	87,269	85,149	77,143	79,853	91,913	85,430	76,894

Branch of Industry	*Staff*							
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
	GROUP XIV							
Bookbinding establishments	768	719	709	743	792	911	1,044	927
Cardboard factories	928	1,184	1,187	1,726	1,626	1,552	1,255	1,276
Papermills	3,277	3,368	3,090	3,606	3,589	4,410	4,265	4,248
Strawboard factories	2,328	2,019	1,521	1,212	1,582	2,828	2,247	2,369
Paper-bag factories	595	662	606	541	542	260	647	657
Rag-sorting works	787	995	1,020	800	911	723	440	554
Other paper works	284	447	415	561	415	725	719	597
	8,967	9,394	8,548	9,189	9,457	11,409	10,617	10,628
	GROUP XVa							
Flaxmills	855	1,151	1,435	1,709	1,444	1,535	1,845	1,247
	GROUP XVb							
Cotton-spinning mills	1,800	2,662	2,574	1,078	1,910	1,052	2,244	2,313
Cotton-spinning mills (also weaving mills)	8,481	9,500	8,499	3,739	6,190	7,979	8,349	8,611
Cotton-weaving mills	16,376	15,265	13,218	5,677	4,882	15,305	19,965	19,654
Linen-weaving mills	1,961	1,872	1,673	1,254	1,079	1,178	1,375	1,429
Dyeworks	841	814	988	1,041	1,084	1,061	1,052	1,043
Bleacheries	1,242	1,188	983	579	204	1,037	767	811
Calico-printing factories	1,637	1,390	1,484	1,178	817	1,217	1,127	1,010
Cottonwaste factories	250	184	190	193	154	440	382	480
Tricot factories and knitting works	3,865	4,289	4,200	3,320	2,593	3,621	4,366	4,333
Tape factories	530	769	883	730	598	934	1,263	1,086
Kapok-cleaning works	52	40	40	27	45	45	135	131
Lace factories	44	62	76	62	67	131	267	264

Branch of Industry	Staff							
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
Passementerie factories	274	347	345	311	258	197	155	97
Reeling works	532	289	132	234	160	293	185	131
Twining works	80	202	283	391	321	635	549	568
Carpet and tapestry factories	1,224	1,110	1,048	1,116	935	1,190	1,471	1,644
Jute spinning and weaving mills	8,573	1,654	269	986	967	1,478	1,706	1,690
Sewing and darning works for sacking	237	217	195	160	140	181	276	287
Fishnet works	640	612	574	128	145	491	487	274
Lampwick factories	18	26	15	4	6	. .	. .	. .
Artificial silk factories	212	166	204	448	607	649	1,348	2,609
Cocoanut-matting works	264	230	99	45	121	216	435	411
Wadding and cottonwool factories	106	186	191	213	143	66	30	30
Wool spinning and weaving factories (woolen factories)	6,489	7,539	7,708	7,397	6,694	7,685	8,948	8,436
Worsted factories (with or without stocking factories)	1,480	1,512	1,682	1,487	1,510	1,486	2,037	2,005
Filament and felt factories	42	47	34	47	66	263	55	40
Plush mills	92	117	174	108	102	132	176	161
Roperies	1,286	1,191	1,106	1,283	1,239	1,525	1,483	1,373
Window curtain mills	57	67	67	39	. .	71	87	60
Canvas mills	323	373	346	266	267	228	309	344
Blanket mills	1,814	1,994	1,794	1,657	1,440	1,430	2,375	2,675
Fishnet-mending works	1,104	915	845	395	409	422	692	465
	54,926	56,829	51,919	35,593	35,153	53,538	64,096	64,455
		GROUP XVI						
Gasworks	6,482	7,008	6,951	6,452	5,906	5,714	5,031	4,545
Electric generating stations	847	900	1,150	1,320	2,244	1,862	2,377	2,241
	7,329	7,908	8,101	7,772	8,150	7,576	7,408	6,786

Branch of Industry	Staff *May 1, 1914*	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
GROUP XVIIa								
Bread bakeries	2,116	2,513	3,214	3,014	2,664	2,626	4,046	4,184
Cake, biscuit, and rusk factories and confectioners shops	1,886	2,009	2,009	1,676	1,995	2,113	3,941	3,876
	4,002	4,522	5,223	4,690	4,659	4,739	7,987	8,060
GROUP XVIIb								
Flourmills (with or without bread bakeries)	1,186	1,335	1,455	1,257	1,586	1,520	2,226	2,039
Rice and barley hulling mills	987	587	542	535	282	209	304	269
	2,173	1,922	1,997	1,792	1,868	1,729	2,530	2,308
GROUP XVIIc								
Dairy shops, butter and cheese factories, etc.	4,584	5,319	5,237	5,123	4,296	4,220	7,910	7,650
GROUP XVIId								
Cigar factories (with or without tobacco and cigarette factories)	18,174	19,337	18,160	19,513	8,390	16,358	11,147	13,048
Cigarette factories	149	221	468	840	806	1,813	1,434	1,749
Tobacco factories (with or without coffee and tea works)	1,238	1,471	1,536	1,395	1,072	1,408	2,265	2,148
	19,561	21,029	20,164	21,748	10,268	19,579	14,846	16,945

GROUP XVIIe

Branch of Industry	*Staff*							
	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
Breweries	1,470	1,563	1,605	1,144	1,204	1,516	2,083	2,167
Distilleries, liqueur distilleries, yeast and spirits factories	1,894	2,316	1,682	1,592	1,511	1,452	2,055	2,036
Jam and fruit-juice factories	461	542	576	621	182	718	416	388
Potato-flour mills	1,722	1,733	1,691	1,143	1,841	1,931	600	636
Vegetable canning and drying works	1,319	1,763	3,764	3,777	2,557	1,517	1,160	1,282
Starch factories	592	558	345	218	287	723	658	689
Sugar refineries	1,677	1,203	1,142	1,026	1,240	1,529	1,550	1,537
Seeds and pulse	267	203	209	84	284	236	339	354
Cocoa and chocolate factories	5,133	4,920	5,467	5,089	4,857	6,139	7,147	6,886
Confectionery factories	1,488	1,462	1,690	1,945	1,958	2,199	2,284	2,367
Factories for working coffee and tea	206	210	230	115	150	222	237	215
Coffee-scaling mills	516	307	232	199	465	311	21	10
Gut-cleaning and sorting works	327	327	334	301	366	281	326	316
Candy factories	88	117	106	102	106	91	79	72
Fodder factories	117	129	113	34	90	112	313	263
Fancy meats factories and slaughterhouses	1,498	1,543	1,470	1,301	1,483	1,654	2,244	2,114
Margarine works	1,932	4,181	4,155	2,977	2,823	4,694	2,925	2,959
Fisheries	571	674	579	692	454	208	191	172
Pudding-powder factories	92	79	222	240	177	89	138	137
Saltworks	145	166	164	193	193	322	177	159
Iceworks	271	315	276	239	289	85	110	85
Other factories	645	794	853	1,029	697	835	1,170	1,076
	22,431	25,105	26,905	24,061	23,214	26,864	25,655	25,920
Grand total	313,944	331,030	327,387	303,476	288,251	335,517	341,402	329,701

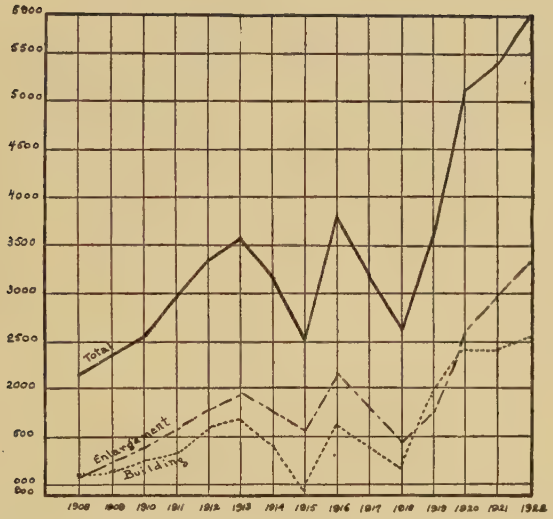
The amount of disturbance which the War caused in the normal development of industry is evident from the number of permissions annually granted under the Nuisance Act for building or enlarging (remodeling) factories or workshops. The accompanying graph gives an idea of it.

Between 1914 and 1919 it is certain that the War interfered with more than 6,000 enterprises, whether in the construction of new buildings or in the enlargement of old ones; and the improvement in these and the following years was probably due in great part to the electrification of existing factories, especially those of smaller size. After a somewhat feverish tendency to build and enlarge in the short golden period at the close of the War, the expansion of industry became out of the question; a great many factories came to a total standstill, which in many cases was permanent.

The results of the labor census also indicate to a certain extent the influence which the War had on the various groups of industry. On page 1 we have already mentioned the numbers of workmen employed in the most important groups in 1909 and 1920; and since the War took place in that period, its influence on the relation between these figures was of great moment. The increase employed in those groups, expressed in percentages of the number in 1909, amounted to:

Articles of food and luxury	30.2
Clothing and cleaning	14.8
Metallurgic industry	83.2
Textile industry	9.0
Leather, rubber	13.5
Earthenware, glass, brick	14.3
Coal, peat	102.1
Printing offices	25.0
Total industry	30.3
Population	17.2

These numbers demonstrate that, excepting the small mining industry (23,000 workmen in 1909), only the metallurgical industry (107,000 workmen in 1909) increased much more rapidly than the population, but that, in particular, the textile, leather, and glass and earthenware industries were checked in their growth. Shortly after the census of 1920, however, the metallurgic industry declined to such a degree that the number of employees fell below that of 1914.



Number of licenses to build and enlarge workshops

The depression was greatest in shipbuilding. The great hopes which the investing public based on the results of industry, relying on an unlimited prosperity, were shown by the capital invested in industrial companies, so far as this might appear from domestic issues. These were:

		Netherlands Industrial Debt	
		Municipal and Provincial Loans	*Industrial Stocks and Bonds*
	Total	*(in millions of guilders)*	
1912	100.1	6.7	12.0
1913	156.1	41.9	19.8
1914	192.6	89.6	15.5
1915	576.8	434.0	27.2
1916	547.6	372.0	33.7
1917	653.5	442.7	62.5
1918	944.6	688.9	46.5
1919	1,436.6	1,026.1	142.0
1920	1,313.7	794.1	114.4
1921	456.9	240.1	61.2
1922	419.2	285.5	29.0
1923	237.7	203.8	10.9*

* Of these 10.9 millions, only 1.6 million was invested in industry proper, the remaining 9.3 millions being placed in electricity, gas, and water companies.

The year 1919 made a very extraordinary showing. In spite of an unprecedentedly high investment in national debentures, industry could control amounts which formerly would have been called fabulous. The sums placed at its disposal otherwise than by issues were not published, but they increased in proportion to investments in public issues. This condition continued in 1920, but came to an end shortly afterwards.

2. THE CERAMIC INDUSTRIES

This group embraces the two main subdivisions, widely divergent in nature and volume, (a) brick, roof tile, and tile pipe works, and (b) potteries and porcelain factories, while such activities as unbaked lime-sandstone and cement works also belong to it.

The industries included under (a) owe their existence to clay of new formation along the large rivers, this clay being very well suited to baking purposes, and to the absence of natural stone for building material and paving. Of less importance than clay brickworks are those which use loam as raw material; these works extend over several provinces. The total production amounts to about one billion[2] of bricks. The industries comprised under (b) are mostly carried on at and near Maastricht, where coarse and fine earthenware, porcelain, and wall tiles are made. Next in importance comes Gouda with its potteries, its declining clay smoking-pipe industry, and its increasing manufacture of artistic earthenware. Delft ware, known of old, is still made at Delft together with more modern articles. In 1912 more than 21,000 workmen were employed in the brick, roof tile, and tile pipe works (about 90 per cent for the production of bricks), more than 6,000 in the porcelain factories and potteries, and upwards of 1,000 in the unbaked lime-sandstone and cement works.

The influence of the War on these industries was very diverse. The export manufactures, viz., porcelain, earthenware, and roof tiles, passed through a crisis. Brick found a much slower sale during the first years on account of dullness in the building trade, but received ample compensation in the period of government-aided construction of houses, schools, offices, factories, etc., after the War; though this was followed by a great relapse in 1922. Want of resources repeatedly impeded the earthenware industry, and all the activities mentioned were seriously hampered by a shortage of coal. This was particularly the case with the brick and tileworks, which consume much fuel, even though they made all possible use of peat, lignite, and wood.

Brick, Roof Tile, Paving Tile, and Tile Pipe Works.

At the outbreak of the War the season's labor of making bricks had nearly stopped, but the winter work of baking bricks and digging and conveying clay started normally. Difficulties in obtaining fuel were encountered sporadically, and military precautions temporarily prevented a few factories from obtaining a supply of raw materials. A decreased demand was soon felt in consequence of the dullness in the building trade. Sales fell 25 per cent during the winter, and the prospects were most uncertain, while prices were declining.

On April 1, 1915, the bricks on hand in the yards were double the amount in normal years. In 161 works in Gelderland there were about 500,000,000 bricks, whereas at the same date in other years the stock was about 250,000,000. This increase, being due to importation from Belgium as well as to the high price of fuel, made the condition more critical; so that in 1915 seventeen of the 162 works in Gelderland were shut down, and the production of many of the remainder was lessened, with the result that the output was 650,000,000 bricks, instead of about 850,000,000. Four out of the forty-three works in the northern provinces ceased operations, while the small brickworks, which are commonly found in Limburg and which numbered about 300, were reduced by five-sixths. The roof tile industry was subjected to much the same fate as that of brick, and in Belgium it also lost a great outlet to the Germans, while the works in the neighborhood of the frontiers, obtaining their material from Germany, often encountered obstacles. Drainpipe works continued fairly normal, because agriculture was doing well.

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[2] According to American usage: one thousand million.

In 1916 the brick industry suffered more than any other for want of fuel and because of its high price; and this led to a considerable shrinkage of production, to the shutting down of several factories, and to the replacing of the old model of furnaces by the more economical ring-shaped type.

The consequence of the diminished output was that the stock of brick was no longer so large in the beginning of 1917, though in Gelderland it still amounted to 325,000,000 bricks (normally 250,000,000). As a result of a revival in the building trade there was a greater demand, but grave difficulties were caused by the want of fuel; for the emergency ration was far below what was needed, and all sorts of expensive material were used as a substitute. The selling prices, especially of pavement bricks, were advantageous, but conditions were unsatisfactory, particularly in the brickworks in the north and along the Hollands Yssel.

In the spring of 1918, the Government stipulated that coal should be allotted primarily to such factories as bound themselves to place fixed quantities of bricks at the disposal of the Government at a rate of about eight guilders per thousand below the market price. These were to be used in building dwellings for the lower and middle classes. The shortage of coal, the necessity of resorting to brown coal, peat, and wood, and the high prices of all sorts of fuel, hampered production increasingly.

In 1919 building was still in a depressed state; consequently the demand for bricks was small, and there was almost no call for the better qualities. Cheaper bricks, in which the competition with Belgium was very keen, were needed for the houses for the lower and middle classes.

In 1920 and 1921 the condition was very satisfactory owing to the feverish pressure in the building trade, especially for dwellings, offices, schools, factories, shops, etc. A great relapse came in 1922. The brickworks at a distance from the rivers dwindled; the Hollands Yssel had only seven works with an annual production of 35,000,000 bricks; and in Friesland, where 70,000,000 were made before the War, the number declined to 15,000,000. The roof tile and tile pipe industries had a bad time after the armistice, for Belgian and German competition was keen, while export was very disappointing, and prices were hardly remunerative. The increased building of flat-roofed houses also had a prejudicial influence. In this industry several enterprises failed, and in 1922 the condition was less satisfactory even than before the War. Quite apart from war influences in this period, the brick trade suffered seriously because of a greater use of other material for building and paving. For use in building houses, lime-sandstone and the cheap, soft Belgian bricks had long been serious competitors for making inner walls and foundations, but concrete became an equally important substitute, not only for constructing houses, bridges, etc., but also in some places, for erecting entire blocks of buildings. Though it is uncertain whether the latter experiments will succeed, it is beyond doubt that the brick industry is seriously threatened by additional wear and tear on pavement caused by increasing motor traffic, and especially by the use of motor trucks. The bricks utilized for streets and roads, the production of which has been improved within the last ten or twenty years both in composition and in method of baking, must yield in part to modern road-ballast of various composition. Import and export have ever been important factors in the case of roof tiles. As for bricks export has never been of great moment, but the reverse is true of importation, especially from Belgium. In recent years, many efforts have been made, with some measure of success, to ship consignments to North America, though Belgium was the chief foreign customer. The following figures, which can be given only from 1917, will give an idea of the import and export:

UNGLAZED BRICKS

Year	*Import*			*Export*
	Total	*From Belgium*	*From Germany*	*Total*
	(in thousands of kgs.)			
1917	242,555	221,169	16	846
1918	37,934	26,613	11,306	51
1919	238,449	212,684	25,765	1,356
1920	499,695	418,090	81,052	2,499
1921	974,269	745,412	228,255	8,793
1922	321,464	205,294	116,169	26,840

UNGLAZED ROOF TILES

Year	*Import*			*Export*		
	Total	*From Belgium*	*From Germany*	*Total*	*To Belgium*	*To Norway and Denmark*
	(in thousands of kgs.)					
1917	9,719	136	9,583	1,081	263	781
1918	1,015	18	998	1,846	34	1,754
1919	1,622	94	1,529	17,920	12,883	5,037
1920	4,295	870	3,424	49,227*	2,947	1,612
1921	25,017	6,057	18,915	19,481†	3,970	352
1922	12,529	1,414	11,090	37,806‡	8,724	136

* To France, 44,215.
† To France, 11,612.
‡ To France, 27,478.

During some periods of grave injury to industry by importation, the Government promoted domestic manufacture by decreeing the exclusive use of homemade bricks and clay tile pipes for government buildings erected by or with subsidy. With regard to brick, the measure was abandoned because the price was forced too high; with regard to clay tile pipes, the conditions were evaded on a large scale.

Lime-Sandstone Works.

In this industry,—nearly a quarter of a century old in the Netherlands,—in which bricks were pressed from sand with an addition of lime, and then hardened by steam in boilers, there were seventeen works with a total of 500 hands in 1912; but of these only nine had more than twenty-five workmen (380 in all). Total production before the War amounted to about 100,000,000 bricks. During the

War, this industry experienced the same advantages and disadvantages as the brick trade, except that fuel was a much less important factor, and that competition with Belgian brick more directly affected the limestone industry, because the Belgian bricks imported into the Netherlands were almost exclusively soft, being used, like lime-sandstone, only for inner walls and foundations. A special obstacle in this industry was the want of lime. In the first months of the War, five of the thirteen works, which were then in operation, were stopped, and others operated with a smaller production and stock on hand, since there was little sale. Thus, conditions remained unsteady during the War. The harm done to this activity by the War is evident from the fact that in 1913 113,000,000 bricks were made (market value 931,765 guilders), but in 1916 only 79,000,000 (753,773 guilders). After the armistice, the industry revived with a prosperous building trade, but after 1922 it was forced to compete with bricks from Germany and Belgium. The results were so unfavorable that the Government allowed the ten-hour day to remain in effect in the case of the lime-sandstone works; and by enlarging the existing works and building a few new ones, production increased to about 300,000,000 bricks in 1924.

Porcelain Factories and Potteries.

Both historically and industrially the potteries at Delft, Gouda, and a few in Friesland are most interesting, though from an industrial point of view they are far surpassed by Maastricht. The three enterprises there occupy an important place in the export of the Netherlands. In 1912 they had about 5,000 workmen (exclusive of 1,500 in the glass departments), Delft employing 250, and Gouda 150. Directly after the outbreak of the War, export by sea, of great moment to this industry, was impeded; and manufacturers were forced to curtail production and to work for the storehouses, while the public did not buy earthenware objects of art for reasons of economy. A few factories applied themselves to technical and other utilitarian earthenware, which they had formerly obtained from abroad. Yet it was far from possible to produce the normal output, and even in 1915 the situation was complicated by the want of various raw and auxiliary material. Conditions were growing worse, so that large numbers of workmen had to look elsewhere for work, which to some extent was offered them by limestone quarries and collieries.

In 1917, and even in 1918, the industry was hampered by lack of coal and borax.

In 1919, this industry revived only partially. There was no noticeable improvement in potteries, or in the pipe and wall tile industries, though in the course of the year conditions gradually assumed a more promising outlook. The supply of raw material was improving, but it was necessary to face the difficulty that the number of workmen available was insufficient for complete resumption of activity, especially in view of the shortening of the working hours.

At first there was hope of recovery in 1920, since the supply of raw material continued to increase. On the other hand, adverse rates of exchange presented great difficulties in the export trade, while Germany flooded the domestic market. This rivalry gained ground to such a degree in 1921 and 1922 that the manufacture of porcelain and artistic earthenware steadily decreased.

For 1916 the export statistics of porcelain and artistic earthenware record 9,307 tons (16,003 in 1912), valued at 3,300,000 guilders. The East Indies were then the principal consumers, as Belgium had been before the War. The more accurate records since 1917 give the following figures:

	Import				*Export*			
Year	*Porcelain*		*Artistic earthenware*		*Porcelain*		*Artistic earthenware*	
	in thousands of kgs.	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*
1917	4,607	2,226	1,825	650	429	152	4,397	1,055
1918	2,915	1,972	784	482	804	353	2,351	1,109
1919	2,985	2,488	1,031	632	1,886	828	9,556	5,095
1920	5,130	6,787	2,631	2,473	669	877	10,775	6,515
1921	5,367	5,646	4,000	2,539	334	290	8,427	5,127
1922	6,687	5,614	7,027	3,682	354	286	8,466	4,116

As a country of origin Germany occupied the foremost place with about 90 per cent. Export had a greater variety of outlet, but since 1919 Belgium had ranked first. The export figures show primarily the great slackness during the War and secondarily the partial recovery afterward with a decline, after 1919, which was caused principally by a low rate of exchange.

3. THE DIAMOND INDUSTRY

Few branches of industry experience the influence of fluctuations in general welfare to such a degree as that of diamonds. It was, therefore, no cause for wonder that the War with its vicissitudes and its great changes in possessions should entirely dominate this industry. At first, the war-time panic and the economy resulting from it silenced every demand for this article of luxury; but subsequently war profits caused many of their favorites on either side of the ocean to buy more jewels than ever before, and, later still, diamonds were considered a safe investment in some countries. After the revolution in Russia, many jewels found their way from that country to western Europe and America, and entered into keen competition with the new product there. Besides the strongly divergent demand for cut diamonds, the supply of uncut stones was a cause of fluctuations in the industry during the War. The result of all these influences in the years of this summary was as follows.

Long before the War there had been a great slackness. On May 1, 1914, only 6,600 workmen were employed out of a total of from 10,000 to 11,000. After that, however, prospects had improved in connection with the allotment, for the approaching contract period, of the output of the German diamond fields to the English syndicate, and also because of great expectations of American demand. In July, the principal London firms had agreed to curtail production materially. At the outbreak of the War, the whole industry was stopped, but during the opening months some jewelers began very cautiously to distribute a certain amount of work, so that on October 1, 1914, about three hundred diamond-cutters were employed. The number of craftsmen in this branch had meanwhile been increased by about one thousand refugees from Antwerp, and diamond-brokers from that city also established themselves at Amsterdam. The export of cut and uncut diamonds to America amounted in 1914 to only 14,000,000 guilders as against 27,500,000 in 1913. There was a slow revival, so that on January 1, 1915, about seven hundred cutters were employed, and on April 1, 1915, about 2,100 (250 from Antwerp). This number rose to 2,800 on July 1, 1915, but there was no business in rose diamonds, which had hitherto found a market in the Balkans and southern Europe. At the end of 1915, 5,000 cutters, or 50 per cent, were already at work, and there was even a shortage of diamond-cleavers.

A severe control of certificates of origin became necessary to prevent foreign prohibition of all export, a course which would have once more halted the industry. The consignments to America in 1915 rose again to 23,000,000 guilders, and in 1916 to 51,000,000. To overcome difficulties in obtaining raw material and to ensure regular distribution of the available lots of uncut diamonds a "Committee for the import and trade of uncut diamonds in the Netherlands" was established in 1915, working in accordance with the regulations of the Netherlands Overseas Trust and under its control.

On May 1, 1917, a total of 6,081 diamond-cutters were employed. To economize fuel they were assembled in twenty-four factories, and to save light only half an hour was allowed for time off, though these craftsmen, having had the eight-hour day for years, were used to an afternoon rest of two or at least one and a half hours, and had been very keen on it. In 1917, the rose-diamond branch continued to be unfavorable, and exportation experienced great difficulties; but the situation as a whole was not disappointing. The number of the unemployed went down steadily from 5,400 to 2,700. The shipments to America sank to 41,000,000 guilders. In 1918 it could be said that, however great the difficulties in trade, brilliants had quite recovered, but rose diamonds remained in a bad way. In consequence of a decreased demand and obstructed import, the output to North America decreased to 16,000,000 guilders. The year 1919 was preëminently one of prosperity, owing to export to the amount of 153,000,000 to North America; but this was soon followed by a long and serious crisis. In the first quarter of 1920 the number of the unemployed rose from 2,000 to 4,000, and continued to increase, so that 1921 opened with 8,000; 1921 and 1922 remained exceedingly unfavorable, a contributing factor being Belgian competition with its much lower cost of production, though the more serious cause was the crisis in capital, which crushed any inclination to buy. Exports to North America declined to 88,000,000 in 1920, and to 40,000,000 in 1921. How fatal this course of business was to all concerned may, with regard to the workmen, be shown by the figures recording the recrudescence of the number of members of the trade-unions. Before the War, there were five hundred unorganized, as contrasted with more than 10,000 organized. During the War, the system was extended to include all unionists, and yet the number of members, which on January 1, 1920, still amounted to 10,674, fell to about 6,000 in the beginning of 1923. As a result of long unemployment, the outgoing members (except by normal expiration) had, according to the regulations, forfeited their membership in the trade-unions and thus lost the possibility of obtaining work, or had voluntarily found employment elsewhere. Several diamond-cutters had also gone to Belgium, where more work was to be had, though for less money. The depression obliged Amsterdam likewise to lower wages considerably. Supposing the wages of 1914 to be fixed at 100 units, they were 288 at the beginning of 1920, but only 136 at the opening of 1923.

4. THE TYPOGRAPHICAL INDUSTRIES

For many years the typographical industry has been made up of a very great number of small firms, in addition to a very few large establishments. Owing to its limited language-field, the Netherlands does not possess such extensive printing concerns as the Great Powers do. Only fifteen printing offices had more than one hundred employees in 1912, totaling 3,225 hands of the 20,443 engaged in this industry according to the labor census in 1909. Labor conditions in the industry were favorable owing to the organized coöperation of employers and workmen. At first, in August, 1914, the industry suffered seriously. It rapidly recovered, however, and to a surprising extent; but in the following years it suffered again from the differences in the rate of currency exchange. Directly after the outbreak of the War, orders for books and commercial stationery came in slowly. Books were sold on a smaller scale, periodicals were suspended or reduced in size, trade was economized, and distressed branches of industry withheld orders. Newspaper printing offices worked on regularly, it is true, but the mass of advertisements was considerably diminished, and high prices restricted the use of paper when not strictly necessary. Though a large number of workmen were called to the colors, unemployment was greater than ever before, and many printing offices shortened their working hours. The increased amount of printed work for war-time government offices for the distribution of food and materials offered only a trifling compensation.

After the first months of the War conditions improved somewhat, and the percentage employed throughout the week rose from 40.5 to 70.1 between September 26 and December 31, 1914, and from 77.5 to 85 between April 3 and July 3, 1915. Business continued to be scarce, especially in printing offices working for publishers, while lithographic houses and electrotype factories suffered much from want of pictorial advertisements. Toward the end of 1915, the situation had gradually grown normal again. There were difficulties in obtaining raw and half-wrought material, especially chemicals and copper for chemigraphic printing industries. In 1916 there was no cause for complaint. In some places, even lithographic printing offices showed increased activity since they obtained orders formerly placed abroad. On the other hand, the lack of paper and of printer's ink necessitated all sorts of special measures; the dailies appeared in smaller size and were more closely printed; and substitutes, anything but fragrant, were used instead of ink. The succeeding years went by without much disturbance, till, toward the end of 1920, the depression affected the quantity of orders for commercial printed work and also for books, while German competition in exchange was keenly felt. Further, the restrictions arising from agreements with regard to labor contracts and prices forbade adoption of the course open to so many other industries, that is, the acceptance of orders at a small margin of profit or none at all, thus keeping men at work and minimizing losses. In this branch of activity, bookbinding suffered most. Employment declined considerably through general retrenchment, in consequence of the depression and because many books were being printed in Germany; while government offices economized on binding, which was done more and more in the prisons.

5. THE TEXTILE INDUSTRY

This industry with about 65,000 employees occupies one of the first places in factory enterprise of the Netherlands. It is characterized by intense concentration, both because of the size of its establishments (fourteen factories in 1912 with from 500 to 1,000 workmen, and seven with more than 1,000,—several of these plants sometimes belonging to a single firm) and because it is focused in a few centers (Twente, Tilburg, Helmond, Eindhoven and surrounding country, Leyden, Veenendaal).

A. *The Cotton Industry.*

In 1912 this industry employed more than 30,000 workmen of whom 24,000 were in Twente. The number of spindles amounted to 232,446 in 1897, to 382,698 in 1906, to 478,340 in 1910, and to 617,114 in 1916. In 1910 there were forty-nine cotton-weaving mills with 20,850 workmen and 30,940 looms, of which Twente had respectively twenty-seven mills, 16,234 men, and 25,945 looms. There were twenty-five weaving mills using cotton, linen-mixed, and linen, with 3,900 workmen and 5,045 looms, of which 60 per cent were in Twente. The number of cotton looms amounted to 35,866 in 1913, and to 38,253 in 1916. Cotton bleacheries, dyeworks, and calico-printing factories employed about 2,650 workmen in 1912. The importance to the Netherlands of the manufacture of cotton is shown by the statistics of production, valued at upwards of 100,000,000 guilders in 1913. Of this about two-thirds was exported before the War, and approximately two-fifths of the amount went to the East Indies. Since the industry depended upon oversea imports (especially *via* Bremen), both cotton and the greater part of yarns, and inasmuch as two-thirds of the output was exported, the War inevitably revolutionized it. Besides the sudden fluctuations in prices, the most important influences were want of raw cotton, yarns, and dyestuffs, export restrictions, government measures to supply clothing for the people, lack of coal, and the difficulty of purchasing machinery. Serious though these factors were, the inflation of prices had the most lasting effect; and this led to extraordinarily large margins of profit which made it possible to provide for workmen in times of unemployment, and also to enlarge many factories considerably. Though this did not hold good in every case and certainly not for the mills weaving colored cotton, the industry as a whole emerged from the War in an invigorated condition, so that it had an advantage in the subsequent sharp competition in the old markets, as in eastern Asia and southern Europe, and likewise profited by the generally unfavorable character of the situation. Yet, on the whole, the position of this industry in 1922 was not so powerful as it very probably would have been if the War had not disturbed its ordinarily strong trend toward development. The number of spindles rose to 671,069 in 1921, and to 740,975 in 1922; and that of looms to 47,086 in 1921, and to 48,303 in 1922. The total production amounted to 199,679,953 guilders in 1921, and to 212,763,359 in 1922, which was double the value of 1913, though the weight was little more, prices being almost twofold.

The relations between production for export and for home consumption had materially changed; in 1921 and 1922 only 43 per cent was set apart for the former purpose. The spinning mills and the molleton blanket factories benefited most by the profits, and next came the white-goods weaving mills. Between 1919 and 1922 all branches suffered severely, and not least the molleton blanket factories, which had prospered during the War. Before August, 1914, there was, generally speaking, little business in the cotton trade; and prices were high, so that spinning mills made only a small margin of profit. Directly after the outbreak of the War, there was a deadlock. The working hours in the spinning mills were reduced by one or two days, and fine numbered yarns were spun as much as possible. In October, it was again possible to buy raw cotton, even at very low prices, so that normal production was again ensured before the end of the year. In the opening months, the weaving plants were in a state even worse than that of the spinning mills; they worked only from three to four days a week, and had to face the ordeals of inability to export and of canceled orders, some in a smaller, others in a larger degree. This condition was most unfavorable in the houses weaving colored cotton (Hengelo), whose tropical market was lost, and whose dyestuffs were running short. The calico-printing factories met with a similar fate, while the cotton-refuse and cotton-waste enterprises, which had always exported large quantities, suffered from hampered export. The molleton blanket firms, on the other hand, profited by the great demand for their products, and it was almost impossible to meet the requirements either of the belligerents or of a home population forced to economize.

The year 1915 began rather satisfactorily. The spinning plants could work normally, and many weaving mills also booked numerous orders. However, the colored-cotton firms, like the printing factories, suffered for want of dyes, a situation which led to the prohibition of export of coal tar dyes. The cotton bleacheries did not have the English raw material which they used to manufacture. The molleton blanket factories worked as fast as they could. In the course of the year, there was a change for the worse because of a lack of raw cotton, yarns, dyestuffs, and potato-flour; and here again the weaving mills suffered most. At the end of the year, the Allied Powers introduced complete rations in the cotton industry. The working hours were gradually shortened, and workmen were discharged. A beginning was made by obtaining threads from rags to spin coarse yarns. In the cotton-refuse plants business was little better than in the first months of the War, and toward the close of the year conditions became worse. There was no improvement at all with regard to the printing factories, and the bleacheries were in need of caustic soda. In 1916, though it was very difficult to obtain raw cotton, and manufacturers, like the weaving mills, ran great risks, spinning mills could operate regularly; and there was even so much work that in some of them extra shifts were formed from unemployed workmen formerly engaged in Germany, thus giving occupation to about eight hundred men. In spite of an export prohibition enacted in April, the weaving mills could, because of a heavy domestic demand, continue normally after some disturbance caused by lack of yarn; and even the mills weaving colored cotton were very busy, though they had lost their markets in the Levant, Africa, and eastern Asia. From the end of March till the beginning of December, they worked forty-eight hours weekly; but before and after that period operated on shorter time. Cotton-refuse and cotton-waste factories alone continued to experience highly unfavorable conditions, though with some fluctuations; while cotton bleacheries had little work and were in want of chloride of lime.

After the opening months of 1917, in which there was a shortage of labor, activity diminished for lack of yarns, while the coal famine also impeded progress and compelled the spinning mills to dispense with second shifts. In the latter part of the year, difficulties increased, and it was necessary to curtail industry everywhere. All supplies of raw cotton and yarns from America and England were stopped, and could not be secured again before the armistice. Work was continued on a very limited scale with the aid of rationed raw cotton and refuse, which spinners divided equally among all factories, the product being used mainly for cheap clothing for the people. Spinning mills were especially successful in utilizing all sorts of fibers and paper not used hitherto. In the course of 1918, almost the entire cotton industry came to a standstill. In 1919, the first year after the War, a general revival was out of the question; the coal famine continued to be an impediment for a long time, and the supply of raw materials, besides being expensive, left much to be desired. In addition, the cost of production rose even more than in such competing countries as Japan and America. The spinning mills, which gradually resumed work in the first half year, were hampered by slow shipments from America, owing to want of transport tonnage. The quality of cotton was far from satisfactory, and the price was high, while foreign competition, especially Belgian and English, was strongly felt on the domestic market. The weaving mills, which were able to get yarns again after April, were in full swing, but exportation was made at great risk and the terms of payment were often unsatisfactory. After April, the mills weaving colored cotton booked many orders, especially from abroad, though still in want of dyestuffs, and they encountered obstacles in exporting to the central countries. The molleton blanket factories obtained no regular work until the latter part of the year, and the printing factories likewise found no market in the first half year owing to high prices.

The fall in cotton prices in the course of 1920 was marked by a buyers' strike, the public waiting for a still further decline in prices, which could not but increase the serious dullness in trade. Toward the end of the year, there was a general tendency to reduce labor by working forty, thirty, and even twenty-two hours each week, and by giving the weavers fewer looms. The purchasing power in oversea countries diminished, because there was no sale of products to eastern and middle Europe. The cost of coal was particularly detrimental to the Netherlands industry. This backward movement was continued in 1921 with cotton prices declining still further. The second half year brought a little improvement to the weaving mills, but none for the spinning mills, which suffered greatly because of the low rate of exchange with Germany. The mills weaving colored cotton passed through a very bad period, especially at the end of the year. They could not obtain remunerative prices in overseas markets, since consumption there was far below what it had been before the War: China, for instance, imported only half the quantity of 1913 and, on the other hand, developed a considerable textile industry; while Japan, comparatively speaking, sent much larger quantities to China. The year 1922 was very unfavorable. In the beginning, spinning mills did rather well, but later on they worked at a loss. It is true that importation from Belgium and France diminished in consequence of their great domestic needs, but the consignments from

Germany increased. On the principal markets, for instance in Asia, still smaller profits were made than in 1921, though raw cotton had risen in price. The great drawback was that no regular trade was carried on. Manufacturers were compelled to take great risks, even in shipments to the East Indies, where hitherto half-yearly and yearly contracts for orders had regularly been made. The exports to the Far East amounted to 48,000,000 guilders (6,200,000 guilders to India), or 64 per cent of the whole, so that uncertain sales, and still more uncertain profits, obviously injured industry there.

Imports of raw cotton amounted before the War to about 70,000,000 kgs. annually; to 38,000,000 in 1916, to less than 200,000 in 1918, and to 25,000,000 in the four years following, besides from 10,000,000 to 15,000,000 kgs. of cotton-refuse, of which very little was imported in 1917 and 1918. In 1920 the price of raw cotton was double the amount to which it declined to in 1921 and 1922. The import of untwined coarse cotton yarns amounted before the War to about 37,000,000 kgs. annually; to 20,000,000 in 1916, to 15,000,000 in 1917, to 9,000 in 1918, and from 21,000,000 to 33,000,000 in 1919 to 1922. In 1920 the prices here also were more than double those in 1921 and 1922.

IMPORT AND EXPORT OF COTTON DRYGOODS

	Unbleached cotton drygoods				*Bleached cotton drygoods*			
	*Import**		*Export†*		*Import*		*Export*	
Year	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*
1917	435	995	1,009	1,562	832	3,337	3,920	10,867
1918	67	259	98	251	94	2,135	274	1,152
1919	957	3,884	1,776	5,983	1,550	14,159	4,866	26,179
1920	732	4,986	2,865	11,817	540	4,486	9,506	66,452
1921	1,007	3,723	2,241	5,486	421	2,235	10,336	39,674
1922	2,531	7,151	2,508	5,313	644‡	3,137	11,528§	39,686

* Almost entirely from Great Britain.

† Three-quarters to the East Indies.

‡ More than half from Great Britain.

§ Nine-tenths to the East Indies.

	Dyed cotton drygoods				*Printed calico drygoods*			
	Import		*Export*		*Import‡*		*Export§*	
Year	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*
1917	1,228	5,146	1,056	2,876	341	1,660	726	2,692
1918	51	836	76	289	9	119	67	303
1919	3,394	27,567	2,192	13,288	756	7,721	824	6,945
1920	2,477	21,918	3,272	20,662	495	4,787	1,596	14,061
1921	1,908	12,256	2,371	10,575	380	2,600	1,406	8,711
1922	2,737*	14,226	2,302†	8,135	612	3,401	1,458	8,048

* More than half from Great Britain.

† 47 per cent to the East Indies.

‡ 80 per cent from Great Britain.

§ One-third to the East Indies, one-third to West Africa, one-tenth to India.

	Colored woven drygoods			
	Import		*Export*	
Year	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*
1917	12*	51	1,972†	6,233
1918	..	..	285	1,528
1919	50	308	1,518	8,125
1920	55	354	3,760	26,472
1921	40	189	3,113	14,925
1922	213	798	3,434	13,439

* Principally from Belgium, next from Germany and England.

† From one-third to two-fifths to the East Indies; from one-fifth to one-third to India and Ceylon.

B. *The Wool Industry.*

The wool industry is far less important to the Netherlands than that of cotton. Before the War, the number of workmen was about 9,000 (not counting approximately 3,000 in tricot factories and knitting works) of whom some 5,000 were at Tilburg, 1,700 at Leyden, 1,000 at Eindhoven and in the surrounding country, 700 at Veenendaal, and 400 in Twente. According to classification, 1,000 were employed in blanket works, 6,250 in wool factories (cloth, buckskin, serge, baize, etc.), and 1,400 in worsted factories. At the end of 1913 there were 250 wool-carding machines, 173,915 spindles, and 3,317 looms (there are no data for the blanket and for four wool factories); the total production had a market value of 29,000,000 guilders, and about half of this was exported. At the end of 1922 there were 259,609 spindles and 4,653 looms. Only a small part of the raw material is native, though the coarse fleece of the Netherlands sheep is preferred for making worsted; the greater part of the wool used is imported, chiefly *via* England. As this industry depended on foreign countries for half of its product and for the greater and more important quantity of its raw materials, the War could not fail to exercise a deep influence on the course of business. With regard to this product, it must be acknowledged that, despite great risks and various hardships, the trend of prices was such as to leave a considerable cash balance in its favor at the end of the War. Then, however, a new period of unprecedented reverses began, and it will be many years before this activity will be able to develop as it did before the War. The difficulties during the War were not so great for the wool as for the cotton industry, because the former could use native raw material, and could spin shoddy from woolen rags mixed with wool and other fibers. The spinning of shoddy proved of value to many wool factories, though it was not suitable for worsted plants or the Twente wool mills, and could be used only to a very limited degree in blanket works.

After much disturbance in August, 1914, owing to export difficulties and fewer domestic orders, business changed for the better. The home market showed a heavier demand, partly because of a stagnation of imports; and exports again became considerable. Many factories continued to change their output. The shortage of foreign wool caused increased production in the shoddy factories, and led to the employment of supplementary shifts. The worsted plants could operate normally, but dyestuffs ran short. In 1915, the Tilburg wool works were in full swing, especially for army orders. The capacity of the spinning mills was insufficient to reduce the shortage of yarns; work was frequently done during the night and in overtime; and there was a lack of skilled workmen. A few of these plants contrived to make shoddy. The weaving mills were limited in their production by a shortage of English yarns; and though they ran night and day making uniform cloth, they were hampered by want of foreign wool and by lack of dyestuffs, for which exorbitant prices were charged. The Twente wool factories, being unable to utilize shoddy, were in a bad way. The worsted mills had an abundance of orders, including those for the army, but the shortage of wool and dyestuffs permitted only a limited production. Particular difficulty was caused by the fact that none but South American wool was imported, and this was not carded. Since not all the factories could do carding, those that could were overloaded with work, whereas the others were in want of material. The blanket factories began the year well, but in the opening months the demand fell rapidly because of high prices, and export was prohibited. In view of the great cost of wool, manufacturers did not venture to produce for stock. The operating time was decreased, and men were occasionally discharged. In the course of the year, conditions improved, and in a great many factories work again became normal. The threatening famine in wool induced the Government not only to prohibit exportation, but also to take measures which aimed at an economical use of the stock on hand.

Accordingly, at the beginning of the year, the Wool Committee was established as a subdivision of the Royal National Relief Committee, consisting of representatives of the wool industry, the wool trade, agriculture, and the War Office. All domestic fleece and dead wool was requisitioned for private production; and for that purpose the labor inspection instituted an inquiry into the consumption of this commodity. As early as the beginning of October, 1914, Great Britain had forbidden the exportation of wool, even from the colonies; but since the cloth factories in the Netherlands were usually exempted from this prohibition, it caused them little inconvenience. Furthermore, considerable quantities of coarser woolens for the worsted and blanket works were received from South America by the intervention of the Netherlands Overseas Trust, though not in larger amounts than before the War. The requisitions by the War Office, however, took place in a period before sufficient shipments of coarse wool came from South America, so that there was much stagnation. The irregularity in the arrival of raw material increased in 1916, yet work went on, and fair profits were made. To the difficulties of obtaining wool was added the coal famine in 1917. Though there was a great demand for all products, manufacture was compelled gradually to diminish; and night shifts and overtime were abolished. A certain amount of domestic wool not used for the army had first to be surrendered to assist the distribution of worsted by the Royal National Relief Committee; the residue was divided among all factories in proportion to their capacity of production for the public market.

Much shoddy was manufactured. In 1918 all difficulties became overwhelming. The pressing need of clothing and the strong advance of prices caused the Government in April to resolve to seize all rags and to fix maximum prices. This material also was distributed by the authorities, though it had first to be made into fabrics for the governmental supply of clothing; only that which was left might be sold publicly.

An increasing slackness characterized the whole of this industry, and no improvement was perceptible after the armistice. There was scarcely any demand, since a decline in prices was awaited; and, consequently, factories were closed. The year 1919 opened very sluggishly; spinning mills, like the greater number of weaving mills, came almost to a dead stop; and it was only in the third quarter of the year that spinning revived a little. Raw materials still came too slowly from England, and the former Belgian consumers of yarns had not yet resumed work. The wool factories were on the upgrade and applied themselves to finer qualities which were much in demand. The supply of wool and yarns from England and of dyestuffs from Germany left much to be desired. The blanket factories had nearly a normal production after the unfavorable first six months. The year 1920 was full of disappointments. In the wool houses, especially in North Brabant, conditions became worse after the first quarter of the year, a situation which was caused by smaller demands, owing partly to an ample supply at prices that were from 30 to 40 per cent lower than those for home manufacture. The cancellation of orders was no rare occurrence; stocks in the factories accumulated, working hours were curtailed, and men discharged. Toward the close of the year, Tilburg for the most part came to a stop. Worsted houses continued to operate normally; and blanket firms still had a fair demand, both at home and abroad, during the first six months, but found their orders increased before the year was out and were obliged to limit their output.

In 1921, the wool factories were forced to encounter much foreign competition; at first unemployment gained; and only a few factories did anything for the spring season. In the autumn, conditions improved considerably; and since German contractors held out little certainty of delivery, the clothing industry turned increasingly to Tilburg and rush orders caused an increase of activity toward the end of the year. Thus unemployment almost disappeared. The worsted factories had less ground for complaint, and the demand was very gratifying, especially toward winter. In 1922, the condition of the worsted and blanket factories was satisfactory; but the wool firms could hardly sell their products and were compelled to restrict production. There was keen competition on the home market, especially from Germany at first, but later from France and Belgium also, where the cost of production was much lower than in the Netherlands. Moreover the demand decreased because of dullness in the manufacture of ready-made clothing.

In so far as the trend of the wool industry may be shown by statistics, we may refer to the tabulated statement of the number of workmen in factories employing twenty-five or more, and to the following figures with regard to production, import, and export.

The output in 1912 (when about five of the sixty-eight enterprises gave no data), 1916 (when two of the sixty-seven were lacking), 1921 (eighty-three firms), and 1922 (eighty-four houses), amounted to 28,900,000, 64,300,000, 55,000,000, and 56,300,000 guilders respectively. Of these about 22 per cent were worsted and yarns; about 10 per cent, woolen blankets; about 65 per cent, other fabrics; and about 3 per cent, remaining products. Of the products sold in 1921 and 1922 it is shown that 7.7 per cent and 12.2 per cent respectively were delivered to foreign destinations; but it is possible that in reality a larger quantity was exported. The figures for shoddy manufacture in 1913 and 1916 are eloquent, showing a market value of 182,458 guilders and 1,558,227 guilders respectively, or nearly nine times as much in the latter year as in the former. According to the statistics, which are not very accurate, the exports amounted to 23,400,000 kgs. in 1913, but to only 450,000 in 1916. Belgium and Great Britain were the most important consumers. The imports of raw material amounted to nearly 25,000,000 kgs. in 1913, but approximately to only 9,000,000 in 1916. Before the War, the import of soft woolen goods, except blankets and flannel, was considerably larger than the export. In 1913, the total amount was 12,300,000 kgs., of which two-thirds came from Germany. In 1917 to 1922, the import of woolen raw material (coarse, washed, carded, refuse, and shoddy) amounted respectively to 5,500,000, 124,000, 9,800,000, 9,300,000, 9,100,000, and 9,400,000 kgs. There was no export of wool in 1917 and 1918, but in 1919 2,000,000 kgs. were exported; in 1920, 3,000,000; in 1921, 2,500,000; and in 1922, 2,250,000. This export went almost entirely to Germany, only a small portion going to Belgium.

EXPORT OF SOFT WOOLEN GOODS

	1917	*1918*	*1919*
Cloth	17,950 kgs.*	....	134,302 kgs. †
	98,550 glds.	3,475 glds.	2,048,032 glds.
Buckskin	12,333 kgs.	83 kgs.	1,247,473 kgs. ‡
	71,981 glds.	818 glds.	13,191,290 glds.
Flannel	1,818 kgs.	12 kgs.	21,270 kgs.
	12,704 glds.	147 glds.	241,706 glds.
Sundries	4,655 kgs.	141 kgs.	520,150 kgs. §
	44,100 glds.	832 glds.	4,900,695 glds.
Blankets	7,486 kgs.*	916 kgs.	76,045 kgs. ‖
	49,832 glds.	4,378 glds.	724,475 glds.

	1920	*1921*	*1922*
Cloth	163,122 kgs.	108,573 kgs.	217,000 kgs. ¶
	2,278,270 glds.	1,079,800 glds.	1,628,000 glds.
Buckskin	1,022,183 kgs.	456,132 kgs.	446,000 kgs. **
	9,607,235 glds.	3,556,360 glds.	2,894,000 glds.
Flannel	74,062 kgs.	17,360 kgs.	34,000 kgs.
	768,673 glds.	206,029 glds.	235,000 glds.
Sundries	673,076 kgs.	468,714 kgs.	558,000 kgs. ††
	899,140 glds.	4,335,147 glds.	3,396,000 glds.
Blankets	17,001 kgs.	46,387 kgs.*	12,000 kgs.
	112,574 glds.	233,372 glds.	53,000 glds.

* Nine-tenths to the East Indies.
† Two-thirds to Germany.
‡ One-half to Germany; one-fourth to Belgium; one-fifth to Russia.
§ Two-fifths to Russia; one-fifth to Germany.
‖ Two-thirds to the East Indies.
¶ One-fourth to Morocco; one-eighth to the East Indies; one-eighth to Great Britain; nothing to Germany.
** One-fourth to Austria.
†† Two-fifths to Great Britain; one-fifth to the East Indies.

In 1917 and the following years the import of soft woolen goods amounted to 1,300,000, nothing, 2,800,000, 4,900,000, 3,400,000, and 4,700,000 kgs., respectively, and in 1922 had a value of more than 35,000,000 guilders.

C. *Carpet Manufacture.*

This activity suffered in full all the prejudicial influences that affected the textile industry, while its distress was alleviated by none of the advantages shared by other branches. The obstacles noted above, such as difficulties in credit, export impediments, small demand on the part of economizing consumers, want of raw material and, later, adverse exchange were keenly felt by this industry, and its plight was aggravated by the fact that, when the dearth of raw materials necessitated the rationing of wool and fuel, these indispensable materials were allotted primarily to the industries working for the supply of clothing, since carpets were not reckoned among the necessities of life, and the War originated no extra wants which this manufacture could supply. The first consequence of the outbreak of the War was the stoppage of export to the Levant and Egypt, which were important consumers. Domestic orders likewise ceased. There was a shortage of yarns, especially woolen yarns from England, and of cow-hair. The year 1915 was generally rather satisfactory, at least in the ordinary qualities; but the Smyrna factories had a dull trade, wool was dear, and the inclination to buy was small. At the end of the year there was a slight revival. In 1916 conditions were unsatisfactory, and manufacturers were still obliged to contend with a lack of jute, wool, cow-hair, cocoanut fiber, and dyestuffs. In 1917 it became necessary to close one factory after another, for raw materials were dear and scarce, and sales were most uncertain. The year 1918 was likewise unfavorable, though some places showed a little recovery, thanks to the use of paper yarns. After the armistice, symptoms of improvement were soon perceived, but even before the middle of 1919 the industry slackened again. The public did not buy, since they would not take the inferior qualities which had been made in the period of lack of raw material and a decline in prices was expected; exports to the Levant did not improve. In the second half of 1919, there was more demand, especially for the cheap grades, but at that time the factories were continually hampered by a dearth of raw materials, dyestuffs, and coal. In 1920, the difficulties seemed to have been surmounted, and the industry in general manifested great activity. Before the end of the year, however, competition from Germany and England was keenly felt, and this caused a retrogression which led to a restriction of output. It was not until after May, 1921, that everything was in full swing once more with prices reduced by half, so that the public again ventured to buy. In 1922 likewise, work went on regularly, but keen competition with Germany and Belgium was necessary, while the loss of the Levant as an important customer was a severe blow.

D. *The Flax Industry.*

For the most part, flax straw is worked in winter by field laborers and their families or a few helpers, though much is done in the larger establishments of flax dealers. The latter usually operate by machinery, and for several years some of them have retted artificially in hot water. During the War, mechanical industry increased greatly. Not all the flax straw is worked in the Netherlands, for more or less, according to the prices and the labor available, is sent abroad unprepared. Before the War, the land laid down in flax amounted rather regularly to about 15,000 hectares, but after 1914, when only 7,723 hectares were devoted to it, it was cultivated alternately on a larger or smaller area. Prices advanced in consequence of the greater needs of the army, and work was begun earlier in the winter than usual, so that there was much activity, especially as the exportation of unprepared flax straw had practically ceased. Prices still rose in 1915, and the mechanical swingle works were busy even throughout the summer, a condition which had never before existed. New and extensive establishments were founded. In 1916, the industry continued to advance (15,050 hectares); but in 1917 the Government forbade cultivation of a flax area larger than the average of the three years preceding (12,270 hectares). Since the whole output remained in the country, in consequence of a prohibition of exportation, it gave a great deal of work to the swingle works, which had increased in number and extent. In 1918, the food famine compelled the Government still further to restrict flax growing, so that only 5,951 hectares could be cultivated. The consumption of flax was also entirely determined by the Government in accordance with the various needs. In 1920, brilliant prospects led to an unprecedented production. In 1919, the average price was twenty-seven Netherlands cents per kg.; at the commencement of 1920, it rose to sixty-five cents, and 24,354 hectares were laid down. Then followed a great decline with falling prices (8,705 hectares in 1921); and when unprepared flax straw was again allowed to be exported, the golden days of the flax mills were over. In the beginning of 1921, the number of workmen in the large mills was reduced by one-third; and, among other adverse factors, the Irish troubles greatly diminished the demand. In 1922, the Belgian flax mills could pay a higher price for straw than those in the Netherlands, since they were able to operate at much lower wages, and could also export to Ireland more cheaply.

E. *Flax-Spinning Mills.*

Though the Netherlands grows much flax and prepares it for spinning, it possessed up to a few years ago no spinning mills, and even now only one, in which at the outset only coarse numbers were spun. Nearly all yarns for linen weaving must be imported, mainly from Belgium, and in a lesser degree from England. Obviously, then, during the years of the War there was practically no raw material. The quantity of imported untwined flax or hemp yarns amounted in normal years to more than one million kgs. (to 1,400,000 kgs. in 1922), but to less than 200,000 in 1916 and 1917, to 238,000 in 1918, and to 624,000 in 1919. The history of that one mill during the years of the War may be told in a few words. It functioned continuously to full capacity with two shifts, and carried its production to as high a level as was possible with the labor available. During the War, finer yarns began to be spun, and a great amount of flax was worked up in spinning mills, which in normal times used chiefly jute and hemp; so that the flax cultivation, which had previously been organized for export, contributed materially to the supply of domestic needs during the years of shortage in all kinds of fibers. In 1919, raw materials were expensive and difficult to obtain; and the results were unsatisfactory. In 1920, the number of employees was reduced to one hundred, and the working time to thirty hours. It was not until the latter part of 1920 that a slight improvement became perceptible, and that the working time, shortened to twenty hours in the second quarter of the year, could be lengthened. After rather favorable conditions in the latter part of 1921, a keen competition in currency was felt from Belgium, France, and Czecho-Slovakia, which made both the conditions and the prospects worse.

F. *Linen Manufacture.*

Before the War, linen and damask weaving was carried on in twenty-four factories, all of them in North Brabant and employing a total of 1,500 workmen; while a number of cotton mills also used linen as raw material, and the home weaving had not yet become entirely extinct. Thus the industry as a whole was not extensive, neither were the factories large; only five of them had more than one hundred men, and only 800 in all were engaged in this occupation. The number of looms amounted to 1,137 in 1913, and to 1,176 in 1915, the production of the former year being valued at 3,226,363 guilders, and in the latter at 4,122,535. Very little is left, therefore, of the linen weavers and bleachers which in former days were known everywhere. Cotton supplanted linen. This industry was hard hit by the War, and there were not many signs of improvement afterward. In the first months of the War, no orders were received, except from the army, so that the hours were reduced to about one-third. A great drawback was that no more yarns were received from Belgium, and England sent only fine numbers, for which there was little sale. Articles of luxury were not in demand; coarse fabrics were. In 1915 there was still a lack of yarns, especially of coarse fibers. In some factories the men were kept at work by weaving cotton. There was a very small demand for fine linen and damask goods. The year 1916 was extremely bad; and as the War progressed conditions remained highly unfavorable, until at last most weaving mills closed, while others worked only part-time. In 1919, there was a gradual improvement, so that at the end of the year the production was almost normal. In spite of the high price of yarns—as much as five or six times that of former days—the first half of 1920 was still propitious; but later the demand declined sharply, so that the men were kept at work making up a stock of finished goods. Some factories actually shortened the working time to fifteen hours a week, and the staff was reduced by one-eighth. Besides all this, the prices of yarn fell, thus causing heavy losses on stocks in hand. The years 1921 and 1922 showed little improvement, so that there was scarcely any question of normal production.

G. *The Sewing Thread Industry.*

Until shortly before the War, no sewing thread was made in the Netherlands. At Hengelo, a small factory, which in 1914 was working with about fifty men, found a ready sale for its product during the War, when export gradually shrunk and finally stopped. The great need of sewing thread also led other textile houses to twine and mercerize yarns for sewing thread; and in this way they obtained a profitable compensation for the slackness in their ordinary production. A few tape factories and weaving mills thus aided in supplying the need for sewing thread; but the greatest producer was a yarn-twining and dyeing mill, which still continued to manufacture sewing thread after the War.

H. *The Tricot Factories.*

Before the War this industry employed some 3,000 workmen in about fifty large and small factories, nine of which had more than one hundred hands (one with three hundred, and another with five hundred employees). In 1913 the output had a market value of 5,716,445 guilders. The difficulties caused by lack of yarns and prohibition of export were much the same as in the cotton and wool weaving mills. Few transactions were made in the finer grades, but business was all the brisker in the coarse ones. Notwithstanding all kinds of obstacles, production could be carried on with fair regularity in 1915 and 1916, having in the latter year a market value of 11,446,017 guilders, about double that of 1913. However, it must be remembered that the price of woolen yarns had increased from 40 to 100 per cent, and that of cotton yarns by about 40 per cent. In the course of 1917, conditions took a very unfavorable turn. A famine of coal and yarn, a decrease in demand on account of high prices, and a smaller number of army orders, brought several factories to a standstill. In 1918, the dullness still further increased, and only a very few firms by spinning yarn from waste could keep the industry alive. After the armistice, a considerable improvement was perceptible, but this was soon followed by great slackness, caused *inter alia* by restricted export. In the course of 1919, there was a change for the better, thanks to a heavy domestic demand. The workshops for knitting stockings suffered most for want of yarn, and began to feel the competition from Germany with its low wages. In 1920, everything went well until, toward the end of the year, the general decline in trade was felt in this industry also, the number of workmen, which had risen to 5,200, falling to 4,500. During the next two years, this industry carried on steadily until the demand diminished in the second half of 1922, owing to smaller import and purchasing power. The output amounted to more than 12,000,000 guilders in 1921, and to more than 16,000,000 in 1922. For 1921 and 1922, only those factories, some thirty in number, that utilize 10,000 kgs. annually are considered in the statistics of production; in order to compare the different years, however, it is necessary to know that in 1913 and 1916, twenty and forty smaller knitting works respectively are included. The yarn prices were, however, more than double those of 1913. In 1921, the quantity of yarns used was equal to that in 1913, but in 1922 it was about 25 per cent more. Though in the critical years after the War this industry fared much better than the greater part of the textile factories, it also remained far behind its normal growth.

I. *The Jute Industry.*

Jute is spun in a large factory at Ryssen and in a small one at Goirle, and is woven in a large establishment at Ryssen and two small ones at Goirle. The total number of employees is 1,500. In 1914 and 1915, work was fairly normal, though the supply of raw material was anomalous. The weaving mills were forced to contend with export difficulties, so that in September, 1915, one of them shut down. With a renewed supply, however, the industry went on steadily. Since the output was used for military purposes by the belligerents, the supply of raw material was obstructed, and the stagnation became so great that in 1916 production almost came to a standstill. At the beginning of 1917, the working hours were again reduced, while coal famine and lack of raw material continued to oppress the industry, so that in the first half of 1918 the output amounted to scarcely one-third its normal quantity, and ceased almost entirely at the close of the year. The armistice did not at once bring a change for the better. In the first quarter of 1919, the factory at Ryssen worked at about one-third of its capacity, but that at Goirle fell far short even of that attainment. The middle of the year, however, saw a revival, and during the following months these factories operated normally. In 1920 also, the supply of raw material left much to be desired, and the export was unsatisfactory. At Ryssen, work went on normally, but at Goirle the factories for a long time shut down two days each week. Gradually the influence of German competition caused Ryssen to restrict its output in 1921 likewise, so that in the first half year no work was done on one or two days weekly. After that, the outlook changed, so that 1922 commenced with a regular activity, which actually became very lively in the second quarter, since Germany had to provide for its own wants; but when, later on, the German and Belgian products found a cheap market, enterprise slackened again. In this period, the results were generally satisfactory, and profits were made which were used to support unemployed workmen, and which carried the industry through the dark days that followed.

J. *The Artificial-Silk Industry.*

This industry was introduced into the Netherlands at Arnhem in 1912, when a factory was founded which at the beginning of the War employed about two hundred men. During the War the enterprise was compelled to struggle against various difficulties, such as the prohibition of exportation, but financially it was very prosperous. The plans of enlargement were not limited, therefore, to the works at Arnhem, but even during the War initial steps were taken to build a larger plant at Ede, and in 1922 the staff of the two rose to two thousand. After the War, an artificial-silk factory was erected at Princenhagen by another company and began operation in 1921, having a force of five hundred in 1922. At the end of this period, all these enterprises were still being considerably enlarged; and the importance of this new industry to export is shown by its statistics, exports increasing from 55,000 kgs. in 1917 to 794,000 kgs. in 1922 with a value of 6,800,000 guilders.

K. *Plush Mills.*

This industry, which was of small extent, fared better after the war than most other textile activities, for there was no importation whatever, and the domestic demand remained lively. A short period in 1918 and at the beginning of 1919 was unfavorable because of a lack of raw material, and work even stopped, only to be resumed in May, 1919. Conditions remained satisfactory till the middle of 1921, but even after that there was sufficient work, as was also the case in 1922.

L. *Passementerie Industry.*

The great increase of the army gave plenty of work to the military passementerie factories, which, consequently, were in full swing during the first years of the War, and which extended their staffs, especially at Breda. The smaller demand for civilian passementerie (upholstery articles) was amply counterbalanced by additional requirements for uniforms. In 1916, less military passementerie was needed, especially as the uniforms were simplified; and toward the end of 1918 there was scarcely any demand for it. Civilian work, however, again increased after the beginning of 1916, and in 1917 much business was done, though the dearth of raw material put a stop to this in 1918. After the War, the passementerie factories, which had been greatly enlarged, could not find sufficient work, and German competition was soon felt so strongly in the branch working to fill civilian needs, that that branch of the industry likewise remained depressed.

M. *Tape Manufacture.*

In the first months of the War, the tape mills were obliged to curtail their activity, but later, as a result of the discontinued import, there was plenty of work. New tape and lace factories were founded, while passementerie firms also applied themselves to weaving tape, until the shortage of raw material in 1918 put an end to this prosperity. After that, conditions continued to be unfavorable; and though manufacture again proceeded normally after the middle of 1919, the general dullness toward the end of 1920 was strongly felt in this industry, with the result that in the large factories the working hours were reduced to twenty, while German and Belgian competition caused many difficulties in 1921 and 1922.

N. *Sterilized Cottonwool Manufacture.*

Throughout the War, this industry increased steadily to supply the stocks of the army and the Red Cross; and when cotton ran short, cotton waste and rags were used. After the armistice, there was a great reaction, and 1919 began with a total standstill for lack of raw material. Later on, there was no demand, and it was only in 1922 that there was a revival, after which activity remained fairly normal.

O. *The Kapok Manufacture.*

This industry, which was not of large extent, existed mainly through export to Germany; but this was hampered during the War, and exportation to other countries was likewise prohibited, while want of raw material interfered with normal activity, which came to a standstill in 1918. It could not be resumed until March, 1919, but both this and the next year were unfavorable; and it was only in 1921 that conditions could again be called normal.

P. *Rope Factories.*

The rope factories experienced great difficulties, for hemp could no longer be obtained from Russia, Hungary, and Italy, and hemp of other origin and domestic flax were used as makeshifts. Another serious factor was the lessened navigation and fishery. The first months of the War were very unpromising, but about 1915 conditions were a little better, being aided, for example, by the activity in fishing. Everything went well in 1916; but as early as the beginning of 1917, the shortage of raw material compelled some factories to close, one cause of the decreased demand, as has been stated, being the smaller amount of navigation. After the War, the lack of Russian hemp continued to be a hindrance and, moreover, orders were so few that in 1919 the industry almost ceased. Business improved only gradually, but the results were far from favorable even in the years that followed, while slackness in navigation and Belgian competition weighed especially heavily on this enterprise in 1921 and 1922.

Q. *Fishnet Mills.*

The market for nets depended entirely on the extent of the fishing industry. In the first months of the War, there was scarcely any demand, and the output was much curtailed. In 1915 and 1916, there were orders enough, but occasionally there were no raw materials, especially hemp yarns. In 1917, this shortage gradually increased, and there was also a lack of catechu for tanning nets. These troubles were augmented in 1918. There was no recovery after the War, and 1919 was even more unfavorable than 1918, so that only a little more than half the normal number of men were employed. The succeeding years likewise were bad, and the industry went through great difficulties because of failures in fishing enterprises and because of the decline of the franc, which made exportation no longer remunerative.

R. *Canvas Mills.*

This industry also was wholly dependent on navigation and fishery. Up to 1918, the demand was lively, but difficulties arose for want of raw materials. After the War, conditions grew worse; and in 1920 activity decreased, partly on account of Belgian and French competition. There was, however, a little improvement in the two years following.

6. THE METALLURGICAL INDUSTRY

In 1912, according to the enumeration of factories and workshops coming under the Factory Act, 78,567 workmen were occupied in this industry, of whom 24,507 were engaged in 126 factories employing from 100 to 499 men; 7,045 were engaged in eleven factories, employing from 500 to 1,000; and 15,117 in nine, employing more than 1,000. This total number of factories or workshops amounted to 2,825, 1,783 of which had less than ten employees. The influence exerted on this activity by the war affected its branches so differently that they may best be discussed separately. On the whole, the metallurgic industry suffered from the disadvantages that all raw materials had to come from abroad, that contact with the colonies was often cut off for a long time, that many articles formerly imported were now demanded at home, and that the calling to the colors of workmen liable to service caused a general shortage of craftsmen which could partly be met only by employing interned foreign soldiers. The most important advantages, on the other hand, were the heavy orders for the defense of the country and the abnormally large demand for seagoing vessels. The fluctuations may be traced from the following tabular statement of factories employing more than twenty-five men:

	May 1, 1914	*May 1, 1916*	*May 1, 1917*	*May 1, 1918*	*May 1, 1919*	*Feb. 1, 1920*	*Feb. 1, 1922*	*Feb. 1, 1923*
Engineering works	14,454	15,115	14,567	14,377	14,457	15,276	16,860	15,675
Artillery works	1,121	4,319	3,521	3,689	1,950	719	552	534
Electric lamp factories	2,778	5,015	4,772	3,589	4,074	5,333	6,097	7,687
Dockyards	27,537	27,493	26,924	21,391	24,574	31,994	25,496	19,199
The metallurgic industry	79,787	87,269	85,149	77,143	79,853	91,913	85,430	76,894

During the War and the two years following it, the metallurgic industry was characterized, especially, by an unlimited demand for seagoing vessels and by an unprecedented prosperity, which was greatly checked by want of materials in 1917 and 1918. Certain branches alone continued to be depressed, particularly the zincworks, which suffered from a lack of ores. The years after 1920 were, generally speaking, very unfavorable, and many organizations were ruined; while others could do no more than try to keep work going in part, though suffering heavy losses.

A. *Shipbuilding.*

The noteworthy place which the Netherlands has occupied for centuries as a seafaring power on account of her situation and her colonies has given rise to an extensive shipbuilding industry which is of equal moment for the navigation of the Rhine and the numerous inland waterways. Though the Netherlands holds the sixth place as a seagoing nation (she was seventh before the War), carriage by water can hardly be relatively more important in any other country; while the fisheries on the North Sea and the inland waters, especially the Zuyder Zee, are a lucrative source of national income. Before the War, the building of boats for navigating inland waterways and rivers was not limited exclusively to the country's use. Many vessels were built in the Netherlands yards especially for the Rhine; dredging, carried on by Netherlands contractors all over the world, gave regular occupation to a number of yards, while many dredges were built in the Netherlands for foreign account. In 1912, the country had 239 dockyards coming under the Factory Act (including three naval dockyards) with a total of 23,000 workmen, five having from five hundred to one thousand, and four over one thousand. As soon as the War broke out there was stagnation, as in nearly all branches of industry; and though the numerous orders in hand kept many firms working, no new ones were booked, a situation which especially affected the yards building for Germany and Belgium. Neither was there any repairing, so that a large firm at Rotterdam had to reduce its staff from 3,000 to 1,100. It was also necessary to discharge workmen elsewhere or to reduce the hours, so that there was serious slackness, especially in the province of Groningen. In the course of time, higher freights resulted in new orders for seagoing vessels, but rivercraft and canal boats were no longer demanded, one reason being that the mortgage banks were not inclined to find money. The greatly increased demand for seagoing vessels in 1915 gave a good deal of work to the large firms, and induced some small yards, which hitherto had built only rivercraft, to put ocean steamers on the stocks. Those which were unable to do this, had for the greater part to close down, though, fortunately, most of the workmen could find employment elsewhere.

In the middle of the year, the Netherlands mercantile marine had lost by sale and wreckage eighteen and thirteen vessels respectively, with a total tonnage of 60,000 tons. Meanwhile there was an increase of twenty-one vessels of 66,000 tons, and sixty-four vessels of 209,000 tons were in course of construction or ordered for domestic and foreign use. The prices per ton had increased more than 50 per cent between July, 1914, and January, 1915, and continued to rise. The shipping companies availed themselves of their opportunities to sell old boats at fair prices to foreign countries, and then demanded new ones. The ways were insufficient to execute these orders, while a dearth of various materials also had an obstructive influence. Work for domestic navigation improved a little in the course of the year, but Rhine boats were unemployed, and many of them were used as warehouses. In the province of Groningen, the yards had scarcely anything to do, because the so-called Groningen coasting trade and Baltic commerce had come to a standstill. The year 1916, after the first months, resembled 1915. An increasing number of yards applied themselves to making seagoing vessels, this being the case even at Groningen, where Rhine barges were constructed. The building of wooden ships was impeded by lack of timber, which could be obtained only at very high prices. The want of orders for domestic navigation and for German account weighed heavily upon the smaller yards in 1917. Many ocean steamers were built, their number being limited for want of materials, which necessitated discharging workmen or shortening hours, while the coal famine also exercised a disturbing influence. Owing to all these causes, conditions at the close of 1917 were rather worse than in 1916, and in several places, measures already had to be taken to support idle metal workers. In consequence of a shortage of materials, unemployment gradually increased in 1918, so that in March the working hours at Flushing, which had amounted to only forty hours as early as November, 1917, were reduced to thirty-two, and at Rotterdam about thirty interned men were discharged, while in three yards more than five hundred employees were put on half pay. The same conditions held elsewhere; in the second quarter of the year, shipbuilding all but ceased for want of materials; workmen were kept busy only a few days each week; and many were discharged or put on half pay. The decline increased throughout the year, though after the armistice there was some sporadic activity at Rotterdam in reconstructing vessels, which were fitted up for the transportation of refugees and soldiers.

During the first quarter of 1919, the supplies of materials slowly improved, so that the larger yards were able to extend their hours and their staffs. At Flushing, the working time was restored to fifty hours at the end of March, and at Rotterdam the men on half pay were put to work again in April. In September, activity had reached such a height that at Flushing and at Rotterdam overtime became necessary, and a yard at Amsterdam engaged two hundred laborers. The small yards still suffered from lack of material, and did not receive a sufficient number of orders. Though the obstacles in obtaining material were not wholly surmounted in 1920, work could continue regularly, and there was even a shortage of competent workmen, partly because the hours had generally been shortened to eight or eight and a half. In the course of the year, it became more difficult to obtain orders; the fall of the mark made it impossible to compete with Germany; and Belgian currency likewise forbade continuation of the former output. It is true that there was no unemployment worth mentioning at the close of the year; but the absence of new orders and the cancellation of those in hand boded ill for the future. In 1921, because of the rapidly increasing general stagnation that began in 1920, there was scarcely any activity in shipping circles. Vessels were laid up in port in ever-increasing numbers; it was out of the question to order new ones; and with the fall of the mark, Bremen and Hamburg, with their low wages, became irresistible rivals in making repairs. The small yards first completed their orders in hand, and even before the middle of the year all firms in the province of Groningen were practically idle. Toward the close of the year, the larger yards also were in the same condition, and it was no rare thing for hundreds of workmen to be discharged in a body. In the last quarter of the year, a reduction of wages led to an extensive strike, which lasted from October 31, 1921, till January 9, 1922. The strike spread over many municipalities and affected about 18,000 laborers, its result being a fall of 10 per cent in wages for adults and of 15 per cent for younger laborers. The fact that the number of workmen in shipbuilding yards with more than twenty-five hands on February 1, 1920, 1922, and 1923, respectively, amounted to 32,000, 25,500, and 19,000 gives an idea of the decline.

During 1922, the activity in shipbuilding and repairing, already greatly reduced, continued to decrease, even in the large yards; while the general dullness and the impossibility of competing with those foreign countries that had much lower working expenses, made it necessary to discharge larger and larger numbers of men. Since the situation outside shipbuilding was likewise exceptionally unfavorable, most of the unemployed were unable to find occupation elsewhere, and only a few energetic firms kept work going in their yards by accepting orders at a heavy loss. At the end of the year, it could be stated that hardly any branch of industry was more sorely hit by this disorganization of the economic condition, than shipbuilding. Out of 143 yards, 47 (mostly the smaller ones) were then reported to have not a single vessel under construction. The decline since 1919 is shown by the following figures with regard to vessels on the ways, on December 31 of each year:

1919	126 vessels with a capacity of 328,338 gross Netherlands tons
1920	174 vessels with a capacity of 450,964 gross Netherlands tons
1921	123 vessels with a capacity of 313,879 gross Netherlands tons
1922	63 vessels with a capacity of 142,969 gross Netherlands tons

Half a year later, the last figure had already fallen to 100,000. The following statement, which, like a great part of the foregoing statistics, is derived from an article by F. Vorstman in the Navigation Number of the periodical *In- en Uitvoer* (Import and Export) of November 21, 1923, gives a survey of the share of the principal shipbuilding yards in the tonnage constructed, and is especially interesting as showing how many firms began to build seagoing vessels only during the War.

STATEMENT OF THE PRINCIPAL YARDS WITH TONNAGE DELIVERED AND IN COURSE OF CONSTRUCTION

Name	*Tonnage in course of construction and ordered Dec. 31*					*Tonnage delivered*		
	1912	*1919*	*1920*	*1921*	*1922*	*1920*	*1921*	*1922*
Dutch Shipbuilding Co., Amsterdam	39,850	75,100	55,650	41,050	34,050	20,050	14,640	9,500
	13,000L	10,290W	7,030W	10,000W	10,000W	960W	....	2,300W
					30,000L			
"New Waterway," Schiedam	....	86,100	64,200	46,300	15,750	8,800	23,750	33,440
"Feyenoord," Rotterdam	20,800	31,640	36,725	28,100	11,250	1,650	10,725	14,800
	1,680W	3,270W	6,375W	4,120W	3,115W	713W	1,063W	1,460W
Royal Co., "The Scheldt," Flushing	29,700	34,370	20,400	21,890	18,880	2,890	8,850	2,900
	1,680W	10,615W	9,950W	9,810W	9,120W	713W	713W	713W
Yard "Gusto," Schiedam	4,475	27,370	24,920	18,950	18,340	4,450	8,400	10,850
	....	2,000W	2,000W	2,000W	....	1,000W	....	2,000W
Rotterdam Drydock Co., Rotterdam	39,225	34,400	21,560	10,780	1,730	19,200	27,740	9,050
				12,000L				15,000L
Burgerhout, Rotterdam	1,200	18,450	14,900	12,200	1,700	3,800	5,350	10,850
				8,000L	8,000L			
Lobith Shipbuilding Co., Lobith	....	13,900	13,900	10,680	1,250	....	15,600	13,050
v.d. Kuy & v.d. Ree, Rotterdam-Schiedam	....	22,275	14,260	10,550	liquidated	2,150	5,900	5,500
Boele, Bolnes	....	19,920	12,200	9,900	1,200	6,680	3,000	7,000
Dockyard "Dordrecht," Dordrecht	1,700	10,700	9,100	9,100	9,600	5,780	1,000	....
Yard "Conrad," Haarlem-Zaandam	700	11,300	11,300	9,000	6,700	120	5,160	1,550
A. Kuyk & Son, Cappelle o/Y	10,500	23,900	14,500	8,700	2,200	11,875	5,170	10,450
"The Meuse," Slikkerveer	....	14,100	14,100	8,400	7,000	2,100	5,100	1,050
Bonn & Mees, Rotterdam	13,700	14,000	7,000	7,000	7,000	7,000	....	....
C. v.d. Giessen & Son, Krimpe, o/Y	....	29,120	28,750	6,900	12,230	3,570	13,700	6,950
Yard, "The Noord," Alblasserdam	....	16,300	13,800	6,900	620	....	6,870	8,000

Name	Tonnage in course of construction and ordered Dec. 31					Tonnage delivered		
	1912	1919	1920	1921	1922	1920	1921	1922
J. & K. Smit, Kinderdijk	....	21,345	15,690	6,000	7,400	5,650	4,300	100
Wilton, Rotterdam	2,400	8,900	7,410	6,300	7,100	....	3,200	300
J. & A. v.d. Schuyt, Papendrecht	190	3,800	3,500	5,500	600	4,400	....	4,800
Pot Bros., Bolnes	2,900	8,075	5,500	5,400	1,000	2,000	6,300	6,000
Rijkee & Co., Rotterdam	5,950	18,000	9,270	5,250	250	4,500	4,500	5,245
Engine works & dockyard, formerly J. Smit, Kinderdijk	....	15,175	5,725	4,400	12,400	....	6,100	4,100
L. Smit & Son, Kinderdijk	....	4,450	1,950	3,530	1,940	3,000	750	....
"The Merwede," Hardinxveld	2,570	4,450	2,010	3,350	5,350	2,300	1,700	1,750
J. Meyer, Zaltbommel	1,670	6,250	4,850	3,300	2,100	5,400	4,100	4,260
"Yselyard" Kampen, Gorinchem	....	2,500	4,900	3,250	1,800	....	1,020	1,050
de Groot & v. Vliet, Slikkerveer	....	9,100	2,100	3,050	1,800	100	2,100	3,050
de Haan & Oerlemans, Heusden	....	8,820	2,925	2,940	650	3,090	3,500	1,700
Wed. A. v. Duyvendijk, Papendrecht	....	13,800	17,800	2,800	1,500	3,800	....	2,800
Haarlem Shipbuilding Co., Haarlem	....	7,065	4,110	2,800	700	2,990	2,450	3,770
Rotterdam Shipbuilding Co., Rotterdam-Gouderak	....	6,000	6,000	2,800	....	....	4,820	3,100
P. & A. Ruytenberg, Raamsdonksveer	....	3,650	1,250	2,800	3,000	3,200	1,000	4,170
"The Liesbosch,"	....	3,350	3,200	2,650	....	1,450	1,400	....
"The Waal," Nimeguen	....	3,750	3,655	2,500	....	....	2,150	2,300
Jonker & Stans Hendrik Ido Ambacht	....	5,690	3,000	2,470	500	2,000	3,000	1,350

W—Water displacement of battleships.
L —Lifting power of drydocks.
This statement refers exclusively to ocean vessels.

B. *Engineering Works.*

Since the Netherlands produces no iron (the first blast furnace was not yet working in 1922), engine building developed later than in the surrounding countries. Originally this industry worked exclusively (and afterwards for the most part) for domestic factories, pump-installations, navigation, and colonial cultivation. Agricultural engines were almost exclusively obtained abroad, as was also the case with much the greater part of the machinery for working iron and wood, for the textile trade, for printing offices, and for the manufacture of shoes and leather. The building of railway engines is of recent date. Subsequently, the ordinary engineering works were changed to special factories, or the latter were established by the side of the former; and several of them became very extensive and attained a worldwide fame. The statistics of the staffs of factories with more than twenty-five workmen show that the total number of employees from 1914 to 1922 varied approximately between 14,500 and 17,000. The War brought this industry considerable advantages, though for the most part only temporary ones. In 1917, and even more in 1918, lack of material and gradually increasing dullness caused engineering enterprise to slacken. By undertaking the manufacture of various instruments formerly obtained abroad, the factories producing articles for exportation (e.g., meat-cutting machines) found other occupations after a period of slackness in 1914 and the beginning of 1915. The activity in shipbuilding and the enlargement of many establishments, such as those for oil, dairy products, and cocoa, caused an increase of work in the engineering industry, and munition-making also offered a welcome compensation in the branches that had lost ordinary outlets. Toward the close of 1916, the dearth of materials began to put a stop to regular work in an ever-increasing number of factories; and the coal famine likewise compelled some of them to curtail their output. The boiler shops were hardest hit by want of materials, so that at the beginning of 1917 many of them were obliged to shorten their hours. Lack of materials well-nigh dominated conditions in the engineering industry, and even large factories were compelled to decrease their hours from 20 to 40 per cent in the course of the year, while a few hundred workmen were actually discharged. In 1918, the incoming work decreased, because oversea export, even to the colonies, became very difficult, and all kinds of industries, including shipbuilding, had few orders. Despite this general decline, a few enterprises, owing to special causes, had much business in hand, for instance, machinery for potato and vegetable drying-works; while one engineering works arranged to make aircraft. Though there was little unemployment, except among unskilled workmen, until the end of the War conditions had steadily grown worse and at the close of 1918 were unfavorable in most places. In the opening months of 1919, the supply of materials improved, and more orders came in, so that there was a general, though slow, change for the better; and toward the middle of the year, many factories extended their working time to forty-five or forty-eight hours. The year ended with a sufficient number of orders for most firms; and the activity would have been greater if the supply of material had been more regular and if there had been no lack of skilled men.

In the first half of 1920, the situation continued to be satisfactory in every respect, but after that there was a rapid decline in the number of orders, since both Germany and Belgium were able to make much cheaper tenders because of their far lower cost of production, due to the depreciation of their currency. Favored by the considerable amount of work in hand, the condition of this industry in the beginning of 1921 was not yet so unhappy as in many others that were already affected by the general crisis. Before the end of the year, however, workmen were being discharged everywhere; and though at first the skilled artisans were kept busy, they also lost employment in increasing numbers. A great strike at the end of the year put a stop to the greater part of this activity until the middle of January, 1922. Even after that, generally speaking, little work was done, and though very few factories were busily engaged, they were operating at a loss, or were making up stock, so as not to be obliged to stop entirely. Hosts of men were discharged in 1922 in an ever-increasing number of firms, so that the year ended under very adverse circumstances and with no sanguine prospects. The statistics of production for 1920, 1921, and 1922 show figures which are of interest for comparison. The total value of output and the total number of workmen in one hundred and seven factories which then had more than twenty-five hands were as follows:

1920	100,917,000 guilders	20,224 workmen
1921	116,362,000 guilders	18,502 workmen
1922	76,938,000 guilders	15,758 workmen

In all there were in these three years, 139, 140, and 115 factories respectively with more than twenty-five employees. The stagnation in 1922 is shown by the following figures, giving the market value of the total production of the most important articles of this industry:

	1920	*1921*	*1922*
Hoisting and lifting engines made in construction workshops	3,964,496 glds.	5,667,100 glds.	4,418,768 glds.
Hoisting and lifting engines made in engineering works	3,893,183 glds.	3,809,513 glds.	1,602,588 glds.
Propelling engines, steamboilers, motors, implements, pumps, etc.	61,443,958 glds.	71,116,645 glds.	54,899,557 glds.
Railway and tramway material	10,582,710 glds.	14,465,258 glds.	5,719,641 glds.

In 1920 more than two-thirds of the total amount was sold for home consumption, and in the two years following, 48 per cent and 53 per cent respectively. The exports went chiefly to the East Indies, and the importance of the shipments to these colonies is shown by the following statistics for 1921:

	Value of exports to the East Indies	*Per cent of all exports*
Steamboilers	1,501,101 glds.	75
Steam engines	1,130,708 glds.	70
Internal combustion motors	1,346,022 glds.	52
Machinery (to be driven by powerplant)	2,622,309 glds.	45
Hoisting and lifting engines and transport engines	2,304,683 glds.	84
Presses, ventilators, pumps, etc.	2,491,203 glds.	81
Engines and apparatus for sugar factories	12,306,019 glds.*	94
Miscellaneous instruments and apparatus	1,808,482 glds.	65

* An exceptionally high figure, more than twice that for preceding or following years (only 4,263,000 guilders in 1922). To this must also be added 509,633 guilders to Surinam (315,000 guilders in 1922).

C. *Construction Workshops and Smithies.*

The enterprises indicated by these names are not infrequently combined with engineering works. For this reason, and also because they are in great part subject to the same influences (prosperity of other industries, supply of materials, and rate of exchange), a minute description of their vicissitudes during the years 1914 to 1922 would be a repetition of what has been said about engineering, so that a brief résumé will be sufficient. One factor which had a particularly adverse effect on the factories during a great part of this period was the slackness in the building trades. After the War, when Germany again sent out her supplies, these industries suffered severely, because in exporting, Germany levied a high tariff on the material, but allowed it to pass duty-free in a finished state; and this regulation was also felt in sales to the East Indies. The statistics of production and consumption give figures available for comparison only from 1920. For that year, they embrace fifty-nine enterprises, thirty-nine of which had over twenty-five workmen, and for the next two years forty-three and thirty-six factories respectively with more than that number. The total production amounted to 24,762,954 guilders in 1920, to 25,195,160 in 1921, and to 15,563,593 in 1922, while sales to foreign countries were 30 per cent, 38 per cent, and 27 per cent respectively.

D. *Iron Foundries.*

In this industry, one must distinguish between commercial foundries and crude foundries. The former make articles in quantities, such as cooking pans, stoves, and kitchen ranges; the latter cast chiefly for engineering works that do not control foundries of their own. In 1912, thirty-nine iron foundries came under the Factory Act with a total of 3,953 employees, exclusive of the establishments connected with engineering works, but including the workmen employed in five enamel enterprises affiliated with iron foundries. Three of these combined enterprises gave employment to 1,362 men in all, and of the remaining iron foundries, seven had staffs of more than one hundred. A great part of the output of the commercial foundries was exported, mainly rice pans to eastern Asia; but cast products for engineering works, shipbuilding yards, and the building trades were almost entirely sold at home. All raw materials were necessarily imported, and formerly this was likewise the case with nearly the entire amount of the coke, though this condition was changed by working the coke furnaces with materials from the State mines. Immediately after the outbreak of the War, the dearth of raw materials caused stagnation, and the inactivity in the building trades caused a stoppage of orders for that sort of cast work; while export decreased materially. In a few months, however, conditions slowly improved. Though the building trades remained slack in 1915, the recovery in the foundries continued, thanks to the large amount of work for shipbuilding and engineering works and munitions factories. Lack of sufficient quantities of iron was an obstacle, but circumstances steadily improved to such a degree that the end of the year saw an activity hitherto unknown. In 1916, conditions remained stationary, and work went on satisfactorily. The shortage of iron and coke grew worse in 1917, and compelled a curtailment of output, while exports became perceptibly less in consequence of hampered navigation. In the last months of 1916, it had already proved necessary to reduce normal production in some foundries for one or two days each week, and in 1917 this became a general rule, though there was a heavy domestic demand as a result of the deadlock in exportation, this affecting, for example, household articles, such as stoves and gas-boilers, fittings for gas and water mains, and munitions-making. In the course of the year, the orders for engines and shipbuilding diminished, and there was scarcely any demand in the building trades. During the last months of 1917, a few foundries were temporarily stopped in consequence of want of coke and the irregular supply of iron. A small number of commercial foundries which formerly had been operated for the foreign trade, labored under the prohibition of exportation. Nevertheless, unemployment was scarcely perceptible.

In 1918 the difficulties gradually increased, but, generally speaking, work was regular, though capacity was diminished. In some factories, the situation even improved in the course of the year, but others, among them one of the largest, were obliged to employ their workmen in clearing land. The cause of this was a total stoppage of exports. Firms which produced for home consumption could obtain numerous orders, for instance from factories making railway material, and collieries, which were constantly increasing in extent, as well as for stoves and munitions. Conditions were still unfavorable at the close of the year, even after the armistice, though for the time being the production of articles for export was resumed. The shortage of casting-coke was the worst hindrance. In the first half of 1919, there was only a scanty revival, for expectation of falling prices caused many orders to be withheld, and at first there was still a lack of coal. Shipbuilding recovered gradually and in the third quarter of the year other industries likewise revived, so that in September conditions might generally be called rather favorable. The following months displayed an increasing improvement, though a dearth of materials continued to hamper regular work. The beginning of 1920 was characterized by great activity in the iron foundries also despite difficulties in the supply of materials and in the exportation of products; but this industry likewise received fewer orders in the second half of the year, and when the German and Belgian competition in currency was added to the first symptoms of the crisis, it was apparent that a very difficult period had arrived. In 1921, it became imperative to limit production and to discharge workmen; in the second half of the year, only a few furnace foundries were exempt from the general stagnation, and the year closed most adversely. Besides an almost general closing down of establishments on account of an extensive strike among the metal-workers, the remaining factories did next to no work, and at the end of the strike in 1922 scarcely any employment could be given. Only certain branches of this activity, for example the manufacture of rice pans for the East Indies, were in the least satisfactory. The reluctance to buy on account of the general dullness, as well as the slackness in the greater part of industry and the competition in currency, resulted in a further shrinkage of labor in the iron foundries with some rare exceptions, such as in the manufacture of stoves. The year closed with little hope of speedy improvement.

The few steel foundries have not been mentioned separately in the foregoing summary. They were in general affected in the same way as the iron foundries, in so far as regards the number of orders for shipbuilding yards and engineering works and for munitions-making, the decrease of exports during the War, the shortage of raw materials and fuel, and (in the years of stagnation) the impossibility of competing with the countries with a depreciated rate of exchange. The change after 1920 was so severely felt in the steel foundries, that even the largest factory casting and rolling steel was compelled to restrict its output to less than one-third. In 1920, 1921, and 1922, the production of cast iron and steel amounted to about 51, 49, and 44 millions of kilograms, respectively, one-third of which was made in engineering works and shipbuilding yards for other concerns, manufactures for their own use being disregarded here.

E. *Enamel Factories.*

In 1912, this industry comprised seven factories with 2,150 workmen, including those employed in the iron foundries of three large combined firms in Gelderland, but excluding two in North Brabant, where enameling was relatively insignificant in proportion to casting. After 1912, two more factories (without foundries) were founded at Dieren and at Amsterdam. A great deal of the output was exported, especially to eastern Asia, though one of the largest houses worked mainly for domestic orders. The downward trend of the staff from 2,296 in 1914 to 2,046 in February, 1923, with a minimum number of 1,517 on May 1, 1918, demonstrates that these years were unfavorable for this industry. These figures show even too bright a picture, for in the period of stagnation more workmen than necessary were kept employed, the hours often being shortened. In the first years of the War, the lack of sheet iron, tin, and chemicals caused a diminished production of enamel. Despite this, conditions were rather favorable after the middle of 1915; but during 1916, and even more in 1917, the industry was disorganized by the shortage of raw material and restricted export. In the course of 1917, the coal famine contributed to increase the difficulties, and this caused a considerable retrenchment of industry almost everywhere, and even a temporary closing of factories, though there was a heavy domestic demand for the product. In 1918, the manufacture of cast enamel could still go on, but the output of beaten enamel practically ceased. There was no improvement after the armistice, and in the opening months of 1919 likewise the coal famine, export difficulties, and reluctance to buy checked any revival. It was not until the second half of the year that some improvement was perceptible, and that business became brisk, especially for export. This situation continued in 1920, so that conditions were, on the whole, fairly satisfactory; but toward the end of 1920, this industry also experienced the injurious effects of adverse exchange rates and general dullness. At first, factories worked for stock or executed old orders, but in 1921 an increasing number of firms were obliged to slow down, and even to discharge workmen. In 1922, a few factories were rather busy; but the general conditions were far from good, and the year closed with dark prospects. The statistics of production and consumption contain no data regarding enamel factories before 1921, but they show that in 1921 and 1922 the output of enameled ware had a value of 5,246,369 guilders and 6,044,337 guilders respectively, foreign sales being 33 per cent and 37 per cent. The figures for imports and exports (excluding hearths, stoves, gas-boilers, and gas ovens) were as follows:

	Imports		*Exports*	
	Weight in thousands of kgs.	*Value in thousands of glds.*	*Weight in thousands of kgs.*	*Value in thousands of glds.*
1917	806	496	930	604
1918	286	261	289	235
1919	1,619	1,121	2,509	2,160
1920	3,405	3,454	3,938	4,724
1921	5,335	3,379	3,034	2,551
1922	5,940	3,802	3,754	2,493

Germany supplied nearly the whole import; the exports went to all countries, though for the greater part to Great Britain, the East Indies, and Belgium.

F. *Zincworks.*

This factory, which in pre-war times had 870 men and a daily output of seventy-five tons, suffered permanently from lack of ore, coal, and fireproof material to such a degree that throughout the years here under consideration production was greatly diminished, and activity ceased for long periods. Directly after the outbreak of the War, 275 workmen were discharged (65 were mobilized); on January 1, 1915, 170 more were dismissed, and only 300 were employed every other week. Production was reduced to forty tons in 1915 and to thirty-six in the following year. In 1917, a further shrinkage took place, and in the end only one furnace of the twenty was operating. The men were kept at work fallowing land, and in June, 1918, the last furnace was extinguished. After the armistice, the high prices for fuel and ores prevented the resumption of work, which, even on a very small scale, did not begin again until 1920. It is true that ore was supplied, but there was no demand for the output. The third furnace was fired for working ore in March, 1921, and the staff then consisted of 250 men; five months later there were six furnaces in active use and 350 hands. Production increased steadily, so that by the middle of 1922 there were twelve furnaces in use and 550 employees; and the year closed with fourteen active furnaces and 620 workmen, or two-thirds of the pre-war capacity.

G. *The Gold and Silver Industry.*

This branch of industry was scattered all over the country in numerous small enterprises and a few large ones; and it experienced many vicissitudes with a heavy deficit as the final result. Its extent is shown by the number of factories and workshops coming under the Factory Act in 1912; there were ninety-nine factories with 1,683 workmen, but forty-six had less than ten men, thirty-eight had from ten to twenty-five, and only eleven from twenty-five to fifty, three from fifty to one hundred, and one more than one hundred, to be exact, 272 men. In the first year of the War, conditions were, on the whole, very adverse, since there was scarcely any demand for articles of luxury. At Schoonhoven, with 5,000 inhabitants, where this trade is followed by 400 men, the Royal National Relief Committee made an attempt to bring into existence a mass production of articles that were formerly imported, but the result was very poor. About the middle of 1915, there was a slight revival which soon increased, thanks to the large sums made in agriculture, fishery, and commerce in 1916 and 1917. Many of these war profits were converted into ornaments, and the gold and silver industry reaped the advantage. After work had gone on regularly in 1916 and 1917, and even much business had been done, in 1918 increasing difficulties hampered the enterprise for want of raw materials; but the situation improved when the Government took measures to place silver at the disposal of the trade, so that this year likewise passed satisfactorily, though with diminished activity. There was no reason for complaint in 1919, but in 1920 the industry declined, a contributory factor being importation, especially from Germany. At the end of the year, a few workmen lost employment; and when the general dullness reduced or threatened the income of many individuals, the slackness in the gold and silver trade was perceptible to a high degree. To the increased disinclination to buy were added the adverse foreign exchange and the prohibition of importation into countries which had been good customers. In 1921, working hours and the number of workmen were reduced in all enterprises. General unemployment obtained everywhere in 1922; at Schoonhoven, about three hundred men were either entirely or nearly out of work; and even orders for St. Nicholas' Day and Christmas failed to bring any noticeable improvement to this very unhappy situation.

H. *Bicycle Manufacture.*

The almost total absence of hilly roads and streets makes the Netherlands eminently fitted for cyclists, and the bicycle is such a universal means of conveyance, both in the towns and out of them, that no other country has so many in proportion to the number of its inhabitants. The introduction of a bicycle tax in 1924 showed that more than 1,750,000 wheels were then in use. It was a long time before domestic production was in the least proportionate to the demand. Many bicycles were imported from England and Germany, their annual value before the War being between 1,500,000 and 2,000,000 guilders. During the years of the War, the bicycle industry struggled continually against difficulties. At first there was much slackness, because exportation had stopped entirely, and the home demand decreased heavily. When 1915 brought a better market, further aided by army orders, the shortage of all sorts of parts and materials hindered the filling of requirements. There was some improvement in 1916 and 1917, because manufacturers devoted themselves to making parts; but a continual dearth of material, which grew worse in 1918, checked production, an additional adverse factor being the want of tires, which caused a decrease in the demand for bicycles. It was not until the second half of 1919 that work was resumed satisfactorily, though the cost of raw materials and parts was still very high. Soon, however, German competition made the chances of profit very small; and in 1920, many English bicycles were again sold in the market at comparatively low prices. In 1921, it became even more difficult to compete with imports from Germany, and several factories were compelled to curtail production. The year 1922 was generally unfavorable. The production of factories turning out at least five hundred complete bicycles per year (the statistics including even the smaller firms in 1919) was as follows:

1919	34 factories	43,498 bicycles	5,594,209 guilders
1921	23 factories	57,397 bicycles	6,496,924 guilders
1922	22 factories	68,871 bicycles	6,065,901 guilders

In 1922, moreover, ten works made 4,153 bicycles without rubber tires and nineteen establishments, producing more than two hundred frames annually, manufactured 22,463 frames, the assembling of the bicycles being done by small firms. The statistics of import and export show the following figures:

COMPLETE BICYCLES

	Import		*Export*	
	Number	*Value*	*Number*	*Value*
1917	25,433*	734,049 glds.	2,040†	141,883 glds.
1918	14,587‡	623,854 glds.	328	56,681 glds.
1919	48,689	2,088,674 glds.	5,629	570,250 glds.
1920	100,290§	5,444,806 glds.	11,186‖	1,160,894 glds.
1921	170,575*	7,377,581 glds.	8,560	1,001,013 glds.
1922	166,114¶	6,537,000 glds.	6,794**	592,000 glds.

* 95 per cent from Germany.
† 99 per cent to the East Indies.
‡ All from Germany.
§ 88 per cent from Germany.
‖ 95 per cent to the East Indies.
¶ 89 per cent from Germany; 11 per cent from England.
** 81 per cent to the East Indies.

BICYCLE PARTS

	Import		*Export*	
	in thousands of kgs.	*Value*	*in thousands of kgs.*	*Value*
1917	1,835*	3,019,882 glds.	20	46,172 glds.
1918	1,734†	4,532,236 glds.	6	35,847 glds.
1919	2,572*	6,399,389 glds.	151‡	372,864 glds.
1920	5,401*	14,620,058 glds.	279§	994,326 glds.
1921	4,058	8,769,577 glds.	219	601,535 glds.
1922	7,015‖	10,469,000 glds.	326	602,000 glds.

* More than two-thirds from Germany.
† 95 per cent from Germany.
‡ 40 per cent to England; 30 per cent to the East Indies.
§ One-third to England; one-third to the East Indies.
‖ 80 per cent from Germany.

The difference in value between the imported and exported bicycles is noteworthy, and during all these years there was a heavy importation of parts, from which bicycles were assembled in a large number of small workshops. The manufacture of motorcycles was insignificant; in contrast with an importation of 5,660 and 5,542 in 1921 and 1922 respectively (mainly from Germany and North America) there was a home production of only 372 in 1919 and of 311 in 1922.

I. *Incandescent-Lamp Factories.*

The history of this industry is entirely dominated by the remarkable growth of the Philips factories, the result of extraordinary energy, capability, and pluck. A few smaller enterprises, it is true, have held their own by the side of Philips, but they are of much less importance. The number of employees, which increased from about 2,800 to 5,000 during the War, declined to 3,500, and rose to more than 7,000 in 1922, gives evidence of a considerable irregularity in consequence of great disturbances which made it impossible to obtain raw materials and parts, and which forbade exportation overseas. Yet no difficulty, however great, proved invincible. When the supply of globes from Austria and Germany stopped, their manufacture was undertaken in an existing glassworks, until, within less than five months, a complete glass-factory was built and operated by the side of the Philips incandescent-lamp works. In like manner, the production of various gases (argon, etc.), formerly obtained abroad, was taken in hand. It was more difficult to find a regular market for the increasing output, which was necessarily diminished during the years of the strict blockade, though manufacturers hazarded shipping full cargoes across the North Sea in their own vessels and smaller craft. At the same time, the extensive technical staffs continued to improve the lamps and their manufacture, so that, despite all difficulties, the industry was far advanced at the end of this period and became one of the most powerful enterprises in Europe. The importance of this activity is evident from the value of its exports, which amounted to 22,100,000 and 22,300,000 guilders respectively in 1921 and 1922. The chief customers in 1922 were France with 5,100,000 guilders; the Argentine and Great Britain with about 1,250,000; and Brazil, Canada, and Spain with nearly 1,000,000.

J. *Other Metallurgic Industries.*

The statements with regard to the scarcity of raw material during the War and the revival of activity after it, followed by extreme stagnation in 1921 and 1922, are as true for the many minor branches of metallurgy as for those which have been discussed separately. Some of them were busier in the war-years than in normal times because of the suspension of importation, for example, factories, railway and tramway factories, factories for electric apparatus and engines, copper mills, horseshoe factories, factories for fittings for electric lamps, safe factories, and electric wire and cable factories. In other industries, the disadvantages got the upper hand, as in factories for iron wire, screws, nuts, rivets and wire nails, lead and zinc rolling-mills, and metal-pipe and tinware factories.

7. THE CHEMICAL INDUSTRY

This industry is relatively unimportant in the Netherlands, where in 1912 it numbered only eighteen establishments with between one hundred and five hundred workmen, besides one candle factory with more than five hundred men. In that year, 11,600 employees were engaged in 585 factories and workshops coming under the Factory Act, most of them in oil works (2,800), soap factories (1,200), three candle factories (1,100), superphosphate works (1,000), three match factories (650), two white zinc factories (800), four starch works (450), and pharmaceutical and quinine factories (550). During the War, and especially at the beginning of 1917, lack of raw materials and hindrances to export exercised an adverse influence on existing firms; but, on the other hand, the need of articles formerly imported, such as polishes, dyestuffs, and sundry substitutes, called new enterprises into being and gave great expansion to those already established, while the demand for explosives and other necessaries of war gave rise to new industries. In 1918, almost the whole of chemical activity suffered in consequence of entire absence of raw materials and inability to export. After 1920 the falling market in this industry also led to losses which the greatly enlarged factories were wholly, or at best almost unable to bear, so that this group closed with a deficit. The war industries proper vanished as suddenly as they had sprung up. Some expansions during the War, however, led to lasting results, such as the production of sulphuric acid, muriatic acid, chlorine, nitrogen, and tannins, which formerly had been made on a small scale if at all. A peculiar phenomenon in chemical activity during the War was a strong concentration of enterprises, as when five superphosphate factories united; and a wide community of interests was formed between the candle, oil, and soap industries, closely allied to the manufacture of margarine.

The oil factories were in full swing at the beginning of the War, which gave rise to an expansion of this activity in 1915. In 1916, these conditions continued, and fair profits were made; but 1917 opened with a considerable retrogression, and lack of raw materials brought nearly every firm to a standstill. In 1918, the situation remained equally unfavorable, though some establishments found occupation in making coal-briquettes and cattle fodder. For a few months after the armistice there was a slow improvement, and factories could work to half their capacity, but during the years following there was a constant decline, and men were discharged because it was impossible to operate without very great losses, the only exceptions being margarine firms and the large oil works at Delft.

So far as toilet soaps were concerned, soap factories profited greatly through the stoppage of importation, but, generally speaking, the difficulties caused by lack of raw materials were predominant. Government intervention was necessary to supply the wants of the public and to prevent exportation; and the severe famine of fats in 1918 compelled the manufacture of clay soap. It was not until the second half of 1919 that there was again sufficient raw material, but both then and in the succeeding years small demand and foreign competition forbade satisfactory results. This was especially the case with hard soap, though with regard to soft soap and soap-powder there was less ground for complaint.

The candle factories enjoyed prosperity, in part through the manufacture of glycerine, until 1916, despite much difficulty in obtaining raw materials, including palm oil. Lack of oils and fats caused a considerable shrinkage in production in 1917; and it was only in 1919 that business became more brisk, though this was soon followed by a decline and by periodic standstills. In 1922, work went on with greatly reduced staffs, and in particular the largest factory not only suffered heavily, but even failed to attain its prewar level.

The artificial fertilizer factories were continually in distress for want of raw materials, though they had some highly profitable years. In 1917, the industry was almost entirely stopped by consequence of a dearth of raw phosphates; and in 1918 one firm began to make pig-food for government distribution. After the War, activity was resumed only in part, for Belgian competition and the operation of two new establishments exercised an adverse effect on the old ones. In 1920, the latter failed to produce half their normal output; and though they kept on working in 1921, in 1922 they were obliged to be content with inadequate domestic sales and scanty exports.

The match factories operated fairly normally after overcoming the dearth of wood, alkaloid chromium, and phosphorus in 1915 and 1916. In 1917, exportation was impossible because of the high prices of wood and chemicals, whereas imports continued to arrive. This caused a curtailment of output both then and in 1918, when the largest firm was compelled to close. By the middle of 1919, the factories were again at work, but in this and the following years production remained below normal on account of the small exports.

The pharmaceutical and quinine factories were very active throughout the War, thanks to their freedom from foreign competition; and new products were made. After the War, work went on regularly, though in 1921 this industry likewise suffered somewhat.

The white zincworks depended entirely on the supply of raw materials. With the exception of a few dull periods, they went on steadily till 1917, even in the lithotone branch, but in the course of the year activity diminished quickly, and the men were employed in ground work: roads, canals, etc. In 1918 likewise, the industry was kept going only in part and finally came to a total standstill, being resumed only in June, 1919, and being stopped again in September on account of a strike. In 1920, there were hopes of normal production, but in the second half of the year German competition compelled curtailment. Early in 1921, five hundred of the eight hundred workmen were discharged (the factory had 1,500 after its enlargement) and there was not even a partial resumption until the second quarter of the year, while even in 1922 some furnaces were still idle.

The lack of raw materials and the diminution of exports weighed heavily on the whitelead factories. Two of the four were closed during the War, and the others were considerably weakened, producing scarcely one-third of the normal pre-war output.

The color factories and mills at first suffered little, though later during hostilities they were very gravely hampered for want of oil and other raw materials. In 1918, the whole industry very nearly stopped, and even after the War the former level was not reached, partly because of prohibitions against importations into the old markets.

The glue and gelatine industry was fairly steady throughout the War, except during the period of stagnation caused by a dearth of raw materials and by a coal famine. Results were satisfactory until 1918; and in 1919 and 1920 activity was normal, but after that time there was permanent slackness, since the cost of production in the Netherlands made it impossible to compete with foreign countries.

The lacquer and ink factories were flourishing, thanks to the cessation of imports, but in 1917 and 1918 the lack of raw materials seriously impeded production.

The asphalt factories had little work during the War. Streets were not asphalted for reasons of economy; but, on the other hand, there was an increased demand for mastic and asphalt paper for covering roofs in consequence of a scarcity of zinc. This activity diminished when slackness appeared in the building trades in 1917 and 1918, but after the War the industry continued to be normal.

The manufacture of sulphuric acid flourished and extended its capacity until there was a dearth of pyrites; and at the same time the production of muriatic and nitric acids was taken up, this prosperity being due to the stoppage of imports together with a lively domestic demand for, *inter alia*, munitions-making. The superphosphate works connected with sulphuric acid factories produced a much smaller quantity than in normal times. After the War, the market for acid was considerably diminished, and there was a great slackness, while foreign competition was seriously felt after 1920.

The manufacture of coal tar products was abnormally active until the end of 1917, when the coal famine caused a marked decrease in the production of gas and, consequently, a very small output of tar; and after the close of the War this industry experienced grave difficulties. Under the influence of the War, various minor industries sprang up temporarily, only to vanish as quickly when normal conditions returned. Some of these, however, proved to be of lasting importance, notably the tannin factories and nitrate factories and one factory which was about to make trinitrotoluol.

8. WOODWORKING

This group of industries embraces a great diversity of more or less important branches, of which only the chief will be discussed here. Some of them, such as the basket factories, cooperages, and box factories were entirely dependent on the factories for which they worked, their vicissitudes running parallel to those of fisheries, distilleries, and cigars, and to the export of vegetables, dairy products, margarine, etc.

The furniture industry was very much depressed during this period. The first year of the War was exceedingly adverse, for no one bought furniture, especially when prices were rising. There was some activity, however, in making woodwork for ships, and the Government gave many orders with a view to checking unemployment. Toward the end of 1915, there was a slight, but lasting, improvement, so that in 1917 conditions were rather favorable; but in 1918 there was a decline on account of lack of raw materials. Regular work could not be resumed before the middle of 1919, but in 1920 this situation was gravely affected by want of various sorts of wood, especially that from Slavonia, and at the close of the year it was still further injured by the adverse German exchange, which in 1921 and 1922 led to heavy losses and to an increasing shrinkage of the industry. Many manufacturers became importers to the extent, in 1919-1922 respectively, of 2,700,000, 8,500,000, 14,800,000, and 25,300,000 kgs.

The cane furniture industry centered in the Frisian village of Noordwolde, the government cane-weaving school being established there, went through a very critical period because of the stagnancy in export. The maximum number of workmen employed at any one time never exceeded one hundred, and even this was possible only through the partial aid of the Government. Conditions were likewise very unfavorable from 1919 to 1922, and were rendered still worse for want of cane and by the high prices of osier; later they were especially affected by foreign exchange. The Government still assisted exportation, but this could not prevent three-quarters of the workmen from being out of employment in 1922.

In so far as the sawmills and planing mills utilized foreign wood, which was the case with most of them, especially the large establishments at Zaandam, they depended entirely on their ability to obtain wood. Those which worked domestic wood profited much from the heavy demand, an additional factor being the great vicissitudes in the building trades and the box factories. At the outbreak of the War there was a long strike at Zaandam, and at the end of the strike work was resumed only in part, owing to the dullness in building. In 1915, many boxes were made at Rotterdam, but everywhere else the lack of material resulted in stagnation. This situation grew worse when, at the end of 1916, it became impossible to enter the port of Delfzyl, where it had been possible temporarily to import much of the wood for Zaandam. The years 1917 and 1918 were a distressing period for this industry, but in 1919 there was a revival, though for a long time the market was glutted with sawn wood imported from Finland and Germany. In 1920, business was brisk until Germany began to import into the Netherlands woodenwares at very low prices. In 1921, the activity in the building trades kept work going here and there, but in 1922 there was a general decline.

The fortunes of carpentry during the War ran entirely parallel to those of the building trades; they were, generally speaking, highly unfavorable, many factories coming to a standstill or being closed down. After the termination of the War, there was a great revival, and at the end of 1919 the situation could even be termed very good, while 1920 was still more satisfactory. This, however, was followed by the falling mark, which caused not only the importation of many woodenwares from Germany, but also the sale to carpenters of numerous machines for woodworking at ridiculously low prices, so that a keen rivalry arose, especially between country and town. The year 1920, therefore, showed a general decrease in the industry, a contributing factor being the slackness in building. The importation of windows, doors, and other woodenware for the building trades amounted in 1919, 1920, 1921, and 1922 to 500,000, 5,500,000, 12,500,000, and 10,700,000 kgs. respectively.

Wooden shoes had declined in popular esteem even before the War, as is indicated by the following official statistics:

1889	3,723 enterprises with 6,764 workmen
1899	3,279 enterprises with 6,415 workmen
1909	3,024 enterprises with 6,310 workmen

The making of this kind of footwear was a poor man's occupation in the rural districts, yielding an extra profit to field-laborers. Belgium imported between 2,500,000 and 3,000,000 kgs. annually, while about 500,000 kgs. were shipped to Germany. During the War, this industry enjoyed an activity never known before, because owing to the dearth of leather more wooden shoes were used, and because in 1915 Germany required large quantities for the prisoners of war and after 1916 Belgian importation was stopped. During the period of hostilities, production was doubled; while prices and wages rose to twice their former level and even higher. In 1919, a census showed that the hand-made output amounted to 7,500,000 pairs, and the machine-made to 1,500,000. In the hand-made branch, the number of enterprises was 3,827, and of workers, 7,552; in the machine-made branch these figures were 57 and 844 respectively, though in 1914 there were only 32 factories for machine-made wooden shoes. After November, 1918, there was a sharp reverse, and Belgian importation, the closing of the German frontiers, and a smaller home consumption soon caused the industry to decline to half its capacity and the wages to fall to the lowest in the country. Half the establishments for machine-made shoes disappeared, and half of all the workers found themselves obliged to return to their former occupation as agricultural laborers. In 1919 and 1920, the imports from Germany were larger than ever before, and the prices of Belgian and German wooden shoes were lower than the cost of production in the Netherlands. In 1922, the industry was poor and languishing.

9. THE GLASS INDUSTRY

In 1912, this industry numbered twenty factories with 6,753 workmen, classified as follows: one plate-glass factory, one window-glass factory, three white-glass factories, and fifteen bottle factories. With the exception of a temporary prosperity in the three works first mentioned, this period was, in general, very hard for the manufacture of glass, and in 1922 many factories were still shut down without any prospect of a resumption of activity. A few thousand men were compelled to abandon the industry, and it was out of the question to train new workmen, except in the glassworks of the Philips incandescent-lamp factories, which were founded during the War, and which were given up exclusively to blowing globes and drawing glass bars and curved glass.

Throughout the period of the War, heavy demands were made on the plate-glass firm in consequence of the absence of foreign competition. In the first half year, the shortage of raw materials and of Belgian workmen cut production in half. After that time, activity was normal until, at the beginning of 1917, the Belgians were forbidden to leave their country. The factory then worked at half its capacity, but on July 1, 1917, it was closed on account of want of raw materials and fuel, and because of hampered exportation.

At first the three white-glass factories with 3,500 workmen operated normally and sometimes were in full swing. Freedom from foreign competition created a lively demand for the cheap commodities in general use, though the market for cut glass was constantly dull, and the lack of soda and the scarcity of raw materials continually presented obstacles. After the beginning of 1915, the manufacture of globes (for which the Philips incandescent-lamp factory founded a glassworks) offered fresh employment. Activity diminished, however, toward the close of 1916, when the importation of glass was prohibited in England, and when German competition was seriously felt at home; from that time conditions grew worse, being highly unfavorable in 1918.

The window-glass factory was placed in a difficult position at first through the departure of its Belgian workmen; and though it afterward employed many interned soldiers, it was hampered by lack of lime and sulphate, as well as by a shortage of tonnage for exportation. When the English market was closed toward the end of 1916, the domestic demand still provided sufficient work; but in 1917 and 1918 the fuel famine caused trouble.

The fifteen bottle factories, with 3,650 men and twenty-eight furnaces, worked in great part for the distilleries; but when the latter lost nearly all their export, the bottle manufacture was badly hit, especially at Schiedam. On October 1, 1914, only one-third of the employees were at work. Then followed a period of vicissitudes; export to England was resumed; by January 1, 1916, conditions had considerably improved in consequence of the closing of French factories; and there was even a shortage of labor; but when England prohibited importation toward the end of this year, while Germany declared bottles absolute contraband, this revival ceased. On March 1, 1917, six factories were obliged to close, and the rest operated only at about one-quarter of their capacity. In 1918, conditions grew worse, and the coal famine compelled a further curtailment, so that only a few establishments continued to work, and these only to a very limited degree. After the War, there was a long period before fuel and raw materials could be obtained and markets recovered. The plate-glass factory stopped for two and a half years until the middle of June, 1919; but in September, it resumed normal activity with five hundred workmen, increasing this number to 640 by the eight-hour day. At the beginning of 1921, it was compelled to extinguish one furnace because of diminished sales, and was obliged gradually to reduce its staff to 530. In May and June, 1922, operations were suspended because of a strike, after which production was resumed with an initial staff of 230. At the close of 1922, work was normal again.

The white-glass firms operated very irregularly at half their capacity, though one establishment occasionally did a great deal of work in 1919 and 1920. In 1921 the industry slackened, however, and in one factory only one of the seven furnaces was in use. In 1922, slackness increased; scarcely half the normal number of workmen was employed; and no market could be found for the output. Only the glassworks connected with the incandescent-lamp factory was fully occupied, except for a few brief periods of depression; and it increased its force to eight hundred men. The window-glass establishment was closed in the middle of December, 1918, because of the departure of the Belgian workmen; but activity was resumed in March, 1919, and continued normally until the beginning of 1920, when operations were compelled to suspend on account of the competition in currency. Two months later, production commenced once more, but early in October the cost of fuel and the low rate of exchange of the Belgian franc forced the factory to close down, and all but ninety of the two hundred and fifty workmen were discharged. The glass-blowing works did not resume operations, but a mechanical window-glass factory was built, which, with an interruption for repairing furnaces, functioned with between three hundred and three hundred and fifty men from July, 1921, until February, 1923, when the fall of the franc dealt a fatal blow to the sale of its products. The manufacture of bottles came to a dead stop in December, 1918, because of the coal famine; and Schiedam alone had 1,150 workmen out of employment. In the course of 1919, a few firms gradually became active, and at the beginning of 1920 only three were idle. Toward the end of the year, the industry suffered from foreign competition, and from that moment it declined steadily but rapidly, so that nearly all enterprises stopped in 1922, and the small number that were still operating on a reduced scale could not bargain for remunerative prices. At Schiedam, only one of the seventeen furnaces was burning.

10. THE CLOTHING INDUSTRY

Only a small part of the clothing industry can be included in the category of manufactures. In 1922, there was but one factory that employed more than five hundred men; nineteen had between one hundred and five hundred; thirty-seven between fifty and one hundred; and one hundred and thirty between twenty-five and fifty. The total number of workmen in these establishments with staffs of twenty-five or more was about 11,000, while, according to the labor census of 1909, 108,320 were employed in the clothing and cleaning industry as a whole. The tabular statement of factories with more than twenty-five men, given on page 18, shows an increase from 14,865 to 22,555 between 1914 and 1918. This is explicable in part because of the normal development of a continued concentration of the ready-made clothing industry in factories, though it was also due to a general prosperity of the ready-made clothing firms during the greater part of the War. That prosperity, however, was transitory and was not uninterrupted. The demand for clothing is closely connected with affluence, and since the latter was liable to very wide fluctuations during and after the War, conditions in the clothing industry likewise were very uncertain. During the latter part of the War, a dearth of raw materials made production almost impossible. The uninterrupted rise in prices yielded considerable profits to many enterprising people who had stocked large supplies; but a reversed movement, combined with a low rate of foreign exchange, almost ruined many prosperous firms in the years of the War. The course of business was not the same in the various branches, so that they will best be considered separately.

The first half year of the War was unusually adverse to the industry of making men's clothing to order. A large part of the male population was in military service, and the rest did not buy for reasons of economy. Consequently there was more unemployment in 1914 than ever before, and to combat this situation the making of uniforms was diverted in part, so as to give employment to tailors. A few cities, such as Amsterdam and The Hague, established relief works where clothes were made, and in the winter of that year the number of those thus employed amounted to four hundred and twenty at Amsterdam, and to eighty at The Hague. The spring season exceeded expectations, a helpful factor here being the making of uniforms, so that the relief works could be cut down to one-third. In the autumn, there was a lack of material, especially of the cheap grades, because Germany was no longer a source of supply. This want of material affected the industry still more seriously in the following years, when the large profits in other activities gave rise to a brisk demand for clothing, and fair prices were obtained. A great many people who were less privileged had their clothing turned. This state of affairs would have been impossible for the tailors, if, under the guidance of the Director General of Labor, the making of uniforms had not been divided in order to obviate unemployment. In the spring of 1918, the clothing famine assumed such proportions that the Government seized the raw materials, and took over manufacture, partly in the ready-made clothing factories, and partly for the benefit of the homeworkers. After the War, some months passed before conditions became normal again; and thenceforth the clothing-to-measure industry was subject to the general situation.

The first months of the War saw the closure of many factories for manufacturing men's ready-made clothing, though a few were very busy producing uniforms. Later, the work was regularly divided, and its progress during the period of hostilities was much the same as in the industry of clothing to order. In 1919, when export prohibitions had been lifted, activity was very brisk, and was further assisted by shipments to England; but at the end of 1920 this branch, too, became dull.

In 1914 and the beginning of 1915, little business was done in women's clothing; but 1916 and 1917 were busy years, even in making dresses to order, this situation being due to the large number of foreigners, especially Belgians, and to the profits accumulated in commerce and industry. The firms making cloaks, skirts, and blouses were very busy toward the middle of 1915, owing to the restriction on imports; and factories, especially for cloaks, were continually enlarged and built. In 1916 and 1917, this branch flourished as never before, and there was even a shortage of labor; but lack of raw materials put an end to this prosperity. From the middle of 1919 till the middle of 1920, there was a revival; but conditions failed to reach the level of 1917; and after 1920 German competition and the general stagnation were very depressing factors.

The fine linen industry experienced great slackness only in the opening months of the War, but after that time, thanks to the cessation of imports, the demand continued to be heavy until the end of 1917. For the most part, factories were considerably enlarged, and there would have been a notable increase in production had it not been for the shortage of raw materials, such as fine linen for shirts, collars, and cuffs. In 1918, this dearth brought an end to the halcyon days, and after the War enormous losses were caused when prices declined between 50 and 70 per cent. Work was normal in 1920, and in the beginning of 1921, but after that the adverse exchange became so serious as to forbid any remunerative production.

As regards the remaining branches of the clothing industry, we may note that, after a year of stagnation due to economy, the furriers' trade was more active during the War than in normal times, in consequence of the presence of many foreigners and as a result of war profits. On the other hand, a dearth of English raw materials prevented the cap factories from making a continual profit by the great demand, though work for the militia often helped to obviate unemployment. The straw hat industry expanded in consequence of diminished imports; while umbrella factories had a bad period at first, and continued to produce less than their normal output.

11. SHOES AND LEATHER

The state of affairs in the manufacture of leather shoes is quite unlike that which prevails in the clothing industry, where the retail trade did not develop into the wholesale ready-made clothing activity until within the last fifty years. As early as the beginning of the nineteenth century, shoes were made, to be sold in other provinces, in the Langstraat, that part of North Brabant which is even now the center of this manufacture. This rural industry, mainly practised at home, developed into a powerful export trade. In 1912, there were thirty-four shoe factories with between twenty-five and fifty workmen, thirty-two with between fifty and one hundred, eight with between one hundred and five hundred, and one with more than five hundred, or five thousand in all. To a great extent, tanning, especially in North Brabant, is still carried on in small factories. In 1912, there were one hundred and one tanneries with less than ten employees, thirty-one with between ten and twenty-five, only nine with between twenty-five and fifty, and three with between fifty and one hundred; while of driving-belt establishments which were also tanning, one had thirty-five, another seventy, and another one hundred and fifteen men.

In the first months of the War, the industry of tanning suffered severely for want of hides, which were obtained from the Hamburg, Antwerp, and London markets; but the situation improved when the Netherlands Overseas Trust could make provision for a regular supply. Meanwhile, the tanneries which utilized domestic hides were profiting. There was also a great dearth of tannins, but in the course of 1915 the stocks of both improved. However, many vat tanneries were closed, especially the smaller ones, because, with the great uncertainty of prices, tanners did not venture to run the risk of making leather, which has to remain in the vats from six months to a year. Quick tanners, on the other hand, had more work than in normal times, though a shortage of hides compelled some of them to stop work. In November, the supply of hides was obstructed, and this condition did not improve until some months had passed, when an agreement with the Allied Powers was reached to exchange 100,000 domestic hides for foreign ones. In spite of the scarcity of tannins, 1916 was very favorable, and there was even a shortage of skilled workmen. In 1917, though tannin works had meanwhile been established, the want of tannins prevented normal production. The Government fixed maximum prices for leather, regulated the distribution of hides and tannins, and made cheap delivery obligatory. Under these conditions there was a moderate amount of activity until the armistice. After the War the tanning industry was gravely affected by competition from North America and later on from Germany also; and, in particular, large quantities of sole leather were imported, the freight being less than half that on hides. In 1919, therefore, there was a general depression which caused several works to close. The beginning of 1920 saw a little revival, but after March both sole and chrome leather tanneries were obliged to curtail their activity on account of the unfavorable rates of exchange; and the large firms in particular reduced their staffs considerably. There was a temporary revival in 1921, when the shoe factories again worked normally. In March and in July there was not one man without employment; but after that a period of depression once more set in, and 1922 was exceedingly unfavorable. The only exception to this general situation was an upper-leather firm at Oisterwyk which formed part of a large international combine, and which expanded its activities steadily, so that within a few years it became the largest leather factory in the Netherlands.

At the beginning of the War, lack of buffalo hides made it impossible to produce driving-belts, and there was no export. In a few months, however, there was some improvement, and during the succeeding years of the War, nearly all factories worked regularly. After November, 1918, there was a keen competition with England and North America. The prices of leather and the cost of production were very high; and these difficulties were increased by the smaller domestic demand in 1920, in consequence of the dullness in various industries; thus the subsequent years likewise witnessed a gradual shrinkage in this activity.

The first years of the War were very unfavorable to the manufacture of shoes. Foreign import prohibitions disturbed production in factories that had regular customers abroad; and soon there was such a shortage of upper leather and accessories that many firms were compelled to shorten their working hours from 30 to 50 per cent. In certain places army orders were the only ones that gave plenty of work. In 1915, there was some revival, notwithstanding the high prices, and women's shoes of fine grade were especially in demand, thanks to the Belgian refugees. The year 1916 was even favorable, despite many difficulties arising from lack of accessories in which there was a clandestine trade. In the course of 1917, there was less activity, and scarcely any export, while very high prices also caused the home demand to diminish. During the latter part of the year, some business was done because the Government had the so-called standard shoes made, and the public bought in fear of a further rise in prices. The great scarcity of leather prompted governmental measures, which limited production, and some establishments made shoes of other material, which were not included in the governmental restrictions on leather distribution. The years after the War were very unfavorable for the shoe factories. In 1919, there was a shortage of fine leather, because there was no opportunity to ship from America; the public, hoping for a fall in prices, bought as little as possible; exports were very small, because in the Netherlands leather was expensive and the cost of production was high. Many shoes were imported from the United States, so that a large number of firms were compelled to restrict their production to one-half or even less. In 1920 the situation was equally adverse and, in addition, there was a considerable importation from Czecho-Slovakia which sold far below the Netherlands cost-price. In 1921, extensive unemployment temporarily disappeared; and in the spring there was a brisk demand for expensive fancy shoes from France and England. Germany was a successful rival in cheap footwear, especially after the fall of the mark in September. The year 1922 was very unfavorable, since Germany, Czecho-Slovakia, Belgium, and France produced much more cheaply; many factories were closed, while the output of nearly all the rest was greatly diminished. The following statistics of production and consumption refer to factories making at least one thousand pairs of shoes in the years listed:

Year	*Factories*	*Number of pairs in thousands of pairs*	*Market value in thousands of glds.*
1917	533	6,860	45,309
1919	383	4,929	51,044
1921	338	5,105	40,296
1922	310	4,473*	28,766

* 3,403,408 pairs in North Brabant.

The figures of imports and exports of shoes, boots, and slippers entirely or for the greater part made of leather, were as follows:

	Imports		*Exports*	
Year	*in thousands of kgs.*	*in thousands of glds.*	*in thousands of kgs.*	*in thousands of glds.*
1917	149	510	45	306
1918	0.3	2.5	4	26
1919	867	5,183	217	2,193
1920	1,688*	11,356	143	1,063
1921	2,384†	10,505	94	790
1922	3,881‡	14,236	122	747

* 60 per cent from Great Britain.
† 52 per cent from Germany.
‡ 77 per cent from Germany.

12. THE RUBBER INDUSTRY

Before the War, this industry embraced only five factories with a total of more than two hundred and fifty employees, the chief product being bicycle tires. During the period of hostilities, existing factories were enlarged and new ones were founded, one of which started with two hundred and fifty men; but several of these little war establishments, which in part utilized rubber waste, disappeared in 1919. The origin of this prosperity was the great demand for bicycle and automobile tires and for technical rubber articles, which formerly had chiefly been obtained abroad. The shortage of rubber hampered activity, and in 1917 the situation was so distressing that the Government Office for Bicycle Tires was created to regulate production and distribution. In 1918, a scarcity of rubber and petrol compelled a curtailment of output, but in 1919 the industry was normal until, in the closing months, the import of tires from England and France deprived the Netherlands factories of part of their sales. Even then, however, work continued to be regular until 1920, when there was a total change, caused, on the one hand, by importations from England and North America and, on the other hand, by the overwhelming influence of an unsatisfactory rate of exchange with the surrounding countries. The manufacture of rubber for technical purposes came to a dead stop, and both 1921 and 1922 remained very unfavorable. A few factories were closed; the rest continued to operate with reduced staffs and sustained considerable losses, the total forces of the larger firms being cut from 1,700 to 1,100 after 1920, and the decline in the smaller establishments being even worse.

13. PAPER MANUFACTURE

In 1912, this branch of industry had thirty-four factories with more than three thousand workmen and twenty-two strawboard works with two thousand, the latter establishments, except one at Drenthe, being found in Groningen, where they are directly connected with farmers' coöperative societies. In addition to this, twelve hundred men found occupation in thirty pasteboard factories and seven hundred in twenty-five paper-bag works, only four of which had more than fifty employees.

Despite many obstacles, the operation of the paper factories was fairly normal during the War, though there was little demand for the fancy sorts, and further depression was caused by want of fuel, copper gauze, felt, chloride of lime, glue, rags, cellulose, wood, etc. It was only in the course of 1917, however, that these adverse factors repeatedly caused many firms to cease operations. In 1918, the demand was very small, though more paper was made for yarns; and finally the fuel famine dominated the course of the industry. In the first half year after the War, there was little improvement; orders did not come in; exportation was hampered, and the supplies of wood and cellulose were still insufficient. In the second half of 1919, there was a revival, but it lasted only for a year. The situation then changed for the worse, especially because of the low rate of exchange with Germany, and buyers held back. The state of affairs remained very bad, but in the closing months of 1921 there was some improvement, except in fancy grades. All factories operated regularly in 1922, but the production was not remunerative, and activity decreased during the last quarter of the year.

The strawboard factories, which worked mainly for export, at first experienced difficulties through lack of copper gauze, lime, and muriatic acid, and through the hampering of foreign trade. In 1915, activity was normal, but the price of cardboard was low, and straw was expensive. In 1916, the demand was much greater, and cardboard was higher in price, but straw became scarce because it was used as fodder for cattle. Most firms belonged to coöperative companies of agriculturists and were regularly supplied with straw, but the so-called speculative establishments were less fortunate in this respect. In 1917, the situation was worse in every regard; exports ceased almost entirely; and gradually the factories closed either wholly or in part, so that by the end of December only one was operating normally, and eight were entirely idle. In 1918, the Government regulated the distribution of straw so that half the stock had to be delivered to the factories; and this gave a little more work than in 1917. After the armistice, there was a severe depression, ten works suspending entirely. In 1919, however, exports recovered after England had withdrawn the prohibition on imports, and the factories resumed operations one by one; by the second half year they were in full swing until a three months' strike broke out in June, 1920. Shortly afterward, the demand declined heavily because of dullness in trade in the countries to which goods were ordinarily exported. In the beginning of 1921, eleven factories were again idle; and in 1922 conditions likewise remained unfavorable. In the second quarter of this year, 1922, there was a little revival which progressed slowly until thirteen of the eighteen factories were operating at full capacity.

The paper-bag and paper-board factories prospered during the war, but in 1917 bags declined because of the high price of paper and because they were less used.

14. ARTICLES OF FOOD AND LUXURY

During the War, the several industries making articles of food and luxury were exposed to greatly varying influences. In great measure, they were dependent on the quantities of raw materials available, and these were partly fixed by foreign countries. One group of belligerents had the power to cut off the overseas supplies, in order to prevent the making of foodstuffs for their enemies; and the other group, especially in the latter part of the War, prevented the export of products and the overseas importation of raw materials. The Government commandeered many foodstuffs to supply the people, and regulated the entire production and distribution of the principal varieties. Export prohibitions hampered a large number of existing export-industries and wartime industries, which could have availed themselves of particular needs abroad. These activities generally made fair profits during the War; but the scarcity of foodstuffs led to a continual rise in prices, and charges were high even for inferior substitutes. The Government took measures to obviate the inflation of prices of articles of daily use and to check withholding of supplies; but as the bread ration constantly diminished, the demand for and the cost of additional food increased.

After the outbreak of the War, the meal and flour mills worked at the Government's expense; and when the distribution of bread was introduced in 1917, the sales also were under the Government's control. These years were not unremunerative to those enterprises, even when, in 1917 and 1918, the decrease in the bread ration involved much less activity. After the War, it became clear that there was not sufficient work for the extended capacity of the industry, which included two new large factories and many enlargements. It was only in November, 1920, that all government measures were repealed after this branch of enterprise had enjoyed official aid in receiving its supplies of grain in the summer, when excessive fluctuations in price made the risk too large. Activity was brisk until the end of 1921, especially because exports recovered in connection with a fall of 50 per cent in prices between January and December. Work continued to be regular in 1922.

Generally speaking, the gristmills, one of which was on a small scale, passed through a very difficult period because of a dearth of grain not included in government restrictions and a scarcity of cattle-fodder. In 1918, a general prohibition of grinding was issued; and when restrictions were removed from grain after the War, the old state of affairs failed to return, in consequence of the competing bakers' and farmers' coöperative societies, and because of the large number of small electric mills on the farms.

The rice-hulling mills were extremely busy during the first part of the War; but before long exportation was prohibited, so that this industry was greatly depressed throughout the remainder of the period of hostilities. Most firms shut down for a long period, though a little work was done when some rice was supplied in the spring of 1917 and the middle of 1918. After the War, this activity was unable to recover. Much cheap, hulled rice came from the countries of origin, and the low rate of exchange was a serious factor.

Bakeries were entirely controlled by official distribution, and were obliged to regulate their activity according to the sort of bread and the quantity of the rations dictated by the Government. The ouput diminished in 1917 and 1918, and there was even a period when bread was not baked daily. After the War, the abolition of night work compelled most enterprises to incur expenses for additional machinery; and the introduction of the eight-hour day into industry, allowing factory hands to return to their homes for meals because of the shortened hours of production, decreased the consumption of bread, a staple in the meals eaten in the workshops. In the bread-baking industry itself, the shortened working-time gave less opportunity for making rusks, cakes, and pastries; and this situation caused the rusk-works to be enlarged.

After a short period of stagnancy, the biscuit factories functioned satisfactorily until, in 1917, lack of flour compelled a diminution of output, though biscuits were always in demand owing to the shortage of other foodstuffs. After the armistice, the market decreased very materially, and England imported large quantities. On the other hand, the years 1921 and 1922 were rather normal once more, and this extensive industry constantly had abundant occupation.

Despite the stoppage of exportation, the cake factories were busy until the middle of 1917, when the shortage of rye flour compelled curtailment, causing many firms to close both then and in 1918. After the armistice, the demand was small, and the slackness continued in 1919, a contributing factor being the high prices, especially as the cost of the principal raw material was five times the pre-war amount. This was the state of affairs in 1920, when consumption was 40 per cent of what it had been before the War. In 1921, however, there was an improvement after a considerable fall in prices, and that year and those following it showed satisfactory results and sufficient occupation.

During the first months of the War, the cocoa and chocolate factories passed through a period of great depression, partly on account of a temporary prohibition of exportation. A considerable revival followed, first for cocoa and then for chocolate; and both 1915 and 1916 were very good years in which this industry prospered and expanded, while the use of chocolate as a food increased greatly. In April, 1918, the Government again restricted exportation, though licenses had been given up to that month. The import of cocoa beans was stopped after the autumn of 1916, thus diminishing activity in 1917. The first product to be affected was cocoa, the output of which almost ceased in 1918, and which failed to attain its old level after the War. Beginning with 1919, there was an abundance of raw materials, but little export; and although a large quantity was exported in 1921, it was almost entirely of the cheaper sorts, not of the old and well-known brands. There was somewhat more demand for chocolate. Occasionally in 1919, 1920, and 1921, there was even reason to be satisfied, but the falling rates of foreign exchange made competition more difficult, and the general dullness in 1922 diminished consumption. The enterprises which had been expanded in the years of prosperity competed keenly with each other, so that the results were not yet in harmony with the large amount of business. In 1913, the output was valued at 35,700,000 guilders; in 1916, at 42,700,000; in 1919, at 53,700,000; in 1921, at 55,000,000; and in 1922, at 54,500,000.

The confectionery factories shared the fate of the chocolate works.

They, too, had to combat the shortage of raw materials and fuel after 1917, while sugar and glucose were expensive and scarce, and were for a long time rationed by the Government, which allotted just enough to these industries to keep work going. After the War, there was overproduction in this activity also, in consequence of expansions in the short period of prosperity.

The beetroot sugar industry, carried on by thirty-five factories with about six thousand workmen, was compelled to overcome many obstacles in obtaining lime and fuel, but, thanks to Government support, the working season ended normally each year. When the Government regulated the cultivation of vegetables in 1917 and 1918 in order to protect the food supply, a much smaller area was allowed for sugar-beets; and whereas this had averaged more than 60,000 hectares from 1912 to 1916, it amounted to only 45,705 hectares in 1917; 38,307 in 1918; and 54,000, 67,000, 74,000, 56,000, and 67,000 in 1919, 1920, 1921, 1922, and 1923 respectively. The yield per hectare ranged from 26,000 to 36,000 kgs., with a sugar content of approximately 17 per cent. About half of this was worked up in coöperative agricultural factories, and the other half by private firms, which were amalgamated into one company during and after the War, this concentration compelling a few establishments to close. The financial results were very satisfactory throughout the War, though the Government greatly limited exportation, and foreign prices were much higher than those at home.

Sugar refining, which before the War had been restricted to a few large factories, with seventeen hundred employees, declined during the years of the War. One of the refineries at Amsterdam actually closed down in consequence of a prohibition of exportation and a shortage of fuel, this latter factor obliging the Government to forbid refining for the most part. In 1917 and 1918, the quantity of raw sugar to be worked over was very small, and the output was so rationed that ultimately only the unrefined white variety could be obtained by the public. After the War, the industry recovered, and the demand for the former crystallized sorts gradually returned. The great bulk of the sugar produced by the factories which had been brought up to date was white, but the supply of raw cane sugar was, on the whole, sufficient to ensure the output.

The breweries were obliged to contend with a lack of malt and hops, but could continue to operate fairly normally until 1916, when all their difficulties were augmented. Up to that year they profited by the absence of imports from Germany, and large quantities were exported; but in July, Great Britain prohibited the exportation of malt, and it was then obtained from the United States, which, a few months later, issued a similar interdiction; while the Netherlands Government ceased to place barley at the disposal of breweries for making beer. In 1917, coal could be secured for only half the production, and the increased excise on beer caused a diminished consumption. Expensive raw materials were used, such as rice and tapioca; even this supply ran short in 1918; while export was forbidden, so that activity almost stopped. The year 1919 was likewise very unfavorable. At first, there was a dearth of raw materials, and throughout the year beer was so expensive that consumption was scarcely 15 per cent of the normal quantity. The following years, however, were not unsatisfactory, though 1922 failed to come up to expectations.

With a few exceptions, the Schiedam distilleries, which decreased in importance as a consequence of their struggle with the spirits factories, disappeared during the War; in the opening months nearly half of them were idle because they could not export. After a few months, however, there was a slight revival, and about forty firms resumed operations, thanks to a foreign demand greater than they were able to meet, owing to lack of grain. Soon afterward, there was another decline, and a dearth of raw materials caused more distilleries to close until by the middle of 1918 all had shut down. After the War, the few factories that survived the suspension continued to find business dull.

The yeast and spirits factories, especially the large one at Delft, enjoyed prosperity, for though they had great difficulty in obtaining raw materials, and though overseas export was attended with great risks, work could go on normally because a regular supply of yeast was of interest to the Allied Powers. This enterprise was further aided in a high degree by the advanced technical science on which it was based and by which processes were found that rendered it possible to surmount all sorts of obstacles, such as the working-up of molasses, which made great progress.

The distilleries (including those for liqueurs) fluctuated, but, generally speaking, were not in an unsatisfactory condition, although those which had been accustomed to produce for exportation suffered severely, while domestic consumption decreased in consequence of the rise in prices, and did not become fairly normal again until 1917 and the beginning of 1918. After the War, there was only a slight recovery in exports, for production was expensive. America enacted a prohibition amendment to her Constitution, and a few former markets forbade importation or raised their import duties. The higher excise and the general dullness after 1920 diminished the domestic turnover to about one-quarter of that before the War.

The potato-flour mills, numbering forty, with 1,700 employees during the working season, are all situated in the northern provinces, where the factory potato is grown in reclaimed bog lands. More than half the industry is controlled by coöperative societies of farmers, and privately owned factories had much trouble in obtaining potatoes during the War. The farmers were interested in fostering the activity as much as possible in their own mills with their own potatoes. During the War, the manufacture of flour was entirely determined by the quantity of potatoes available, since the sale of the output was always satisfactory. In 1917, the harvest was small, on account of the shortage of artificial fertilizer; and in 1918 the Government almost entirely limited the production of potato-flour, because the potatoes had to be used as a foodstuff for the people. Many potato-flour mills and other establishments in that period dried potatoes for the Government. A clear idea of the output during the War is given by the following statistics, of the quantities of potatoes ground for flour:

Coöperative mills				*Private mills*			
			(in thousands of hectoliters)				
1913	6,960	1916	6,880	1913	6,220	1916	2,400
1914	6,580	1917	4,148	1914	3,060	1917	1,040
1915	8,552	1918	1,450	1915	4,443	1918	294

After the working season, the Government placed 873,000 hectoliters at the disposal of the mills, and in 1919 restrictions on purchase were removed, so that 8,700,000 and 1,300,000 hectoliters were worked then and in 1920 respectively, although exports left much to be desired in consequence of the competition of Japan and Denmark. In 1920, moreover, flour prices were low; and in 1921, when there was little demand in consequence of the stagnation in the textile and other industries and of the unsatisfactory rate of exchange, only ten mills were operating, and they at scarcely half their capacity. In 1922, there was again a normal working season.

As long as there was sufficient milk, the dairy factories profited by foreign needs; but they were strongly influenced by government measures, both as to export and domestic prices. Exportation gave very good financial results, not only in butter and cheese, but also in condensed milk and milk-powder. The industry was considerably enlarged, and after 1916, when collections from export taxes were used to reduce prices of food at home, the butter and cheese factories shared in paying for the domestic distribution of food. In 1917, the prohibition of importation of sugar hampered the manufacture of condensed milk. Only 40 per cent of the normal quantity of milk was available in that year, and it became so scarce in 1918 that not only was the exportation of dairy products entirely stopped, but condensing and drying, and even churning and cheese-making were forbidden, while only a very small butter ration could be given to the population. In the autumn of 1919, a shortage of fodder and the reduced stock of cattle caused a scarcity of milk, so that no export licenses were granted. The factories for milk products had large supplies in storage, but the demand was small, partly in consequence of competition from North America and falling rates of foreign exchange. Gradually butter and cheese for exportation were released from control, but on condition that milk should be accessible for consumption. There was a little improvement in 1920, and likewise in 1921, while in 1922 large quantities were available and were worked up at remunerative prices.

The salt industry, which had twenty-seven saltworks before the War, was normal during the first years of the War. Sales were satisfactory, and obstacles in obtaining raw material and fuel were overcome. In 1917, however, both these commodities were scarce, and though there was a heavy demand in connection with the salting of many sorts of foods, a number of enterprises were forced to close, beginning with those which used fuel least efficiently. After the War, the saltworks declined more and more. The consumption of salted foods ceased, and importation from Germany was cheap. The output amounted to one-half of that before the War, and in 1920 to one-third. In September, 1919, the first Netherlands salt mine was operated at Boekelo, producing 3,677 tons the first year, and about

25,000 in those following; but after that, only seven saltworks continued to be active.

During the War the preserving of food was a lucrative occupation which developed remarkably; and the existing industry of preserving in tins and jars prospered, notwithstanding the repeated shortage of tin. A temporary expansion took place in drying and salting vegetables, salting fish and mussels, and drying potatoes and fruit, this being done mainly for exportation, though potatoes were dried for the Government in 1918. At the beginning of 1918, there were more than four hundred vegetable and fruit drying works. Shortage of coal and fish checked the further development of this industry. The armistice brought this war-time industry almost entirely to a standstill, and a prohibition of exportation, which was succeeded after its abrogation by an interdiction of importation into Germany and by absence of a market elsewhere, led to extremely heavy losses which ruined prosperous enterprises. The normal industry resumed its customary course after the War and operated quite regularly again in 1922.

The abattoirs for export meat and the fancy meat factories were subject to severe fluctuations, since they depended entirely on export licenses, which could be granted only in connection with provision for the nourishment of the people. These industries were very busy until exportation was prohibited in 1915; and for some months afterwards there was a great deal of work, and enterprises were actually expanded; but the year closed with little occupation, and 1916 was satisfactory only in respect to its fair prices. The year 1917 opened with a general depression, which was followed by a short period of activity when a dearth of fodder made it necessary to slaughter cattle. In 1918, the industry almost stopped in consequence of the prohibition of slaughter; and the Government ordered the abattoirs (including those which worked for the export trade) to refrigerate meat in order to provide against a future food famine. After the War, activities were normal from the middle of 1919, though 1922 was less favorable.

The cigar industry, which, according to the labor censuses, had 25,800 employees in 1909, and 24,200 in 1920, was an important export activity, though, comparatively speaking, there was a larger domestic consumption of cigars in the Netherlands than anywhere else, thanks to the low prices. The vicissitudes in this industry between 1914 and 1922 were, briefly, that after a few years of great prosperity it suffered severely, and there was much unemployment, and no symptoms of recovery were perceptible. During the first months of the War, the exports decreased (for example, for the Serbian Government monopoly), and more than five hundred men were idle. In 1915 there was a slow improvement and a heavy domestic demand, though almost exclusively for cheap grades. Since many cigarmakers were mobilized, there was a shortage of labor, and interned Belgians were employed, the results being very satisfactory. Activity continued in 1916, but again in cheap qualities, and during the latter months there was a decline; tobacco became expensive and scarce, and exports to Germany ceased. The summer of 1917 saw a revival; overseas exports, though only under license, once more became considerable, and the home demand was satisfactory. The financial results were profitable until the opening months of 1918, but since obstacles were put in the way of the supply of tobacco, cigars became expensive, and the Government entirely prohibited exportation. An increasing number of factories came to a dead stop, and some exporters delivered such inferior qualities that the reputation of Netherlands cigars was damaged to such a degree that later export suffered severely. After the armistice, the revival was insignificant; many factories were crammed with large, expensive stocks; there was little export, and the domestic demand was scanty, since living was dear. About the middle of 1919, there was much improvement; great quantities were exported to Germany, and the home market increased. These happy conditions, however, did not last long, for the falling rates of exchange abroad and the high cost of production at home began to impede exportation. In this critical period, it was even necessary to raise wages, because of a biennial collective labor contract with an index clause for compensation. The year 1920 was highly unfavorable and closed with a stoppage of numerous factories and a discharge of many workmen, the situation becoming still worse in 1921 owing to large importations of very cheap German cigars. Of the 20,000 men insured against unemployment, 40 per cent were out of employment in March, 18 per cent in July, and 50 per cent in December. The year 1922 was equally critical. Large numbers were given occupation by the Government in making cigarettes for the Spanish monopoly, but this temporary measure could not rescue an industry that was so gravely affected.

The manufacture of cigarettes was very active during the War, for the cessation of imports led to the establishment of new factories and to the enlargement of those already existing. After the War, sales were no longer sufficient, so that this industry likewise sustained losses, especially when the remaining war supplies were sold cheaply. Unlike cigars, however, the demand for cigarettes is constantly increasing.

15. THE MARGARINE INDUSTRY

Long before the War, the Netherlands had become one of the most important producers of margarine. During the War, the consumption of margarine increased considerably; the Netherlands factories worked in great measure for exportation overseas; and, until March, 1918, the supply of raw materials was not impeded to the degree that was experienced by many other industries. The pre-war home consumption per person was estimated at three kgs., as compared with five in 1917, and with seven in 1923. An intense concentration had been brought about in this activity even before the War, and the powerful organization of the two largest companies was fatal to the smaller firms. After a few years, a large factory which had begun operations at Amsterdam shortly before the War also passed into the hands of one of these enterprises, which took a constantly increasing interest in the allied industries of oil, candles, soap, and glycerine. In 1880, there were seventy margarine factories in the Netherlands, but in 1920 there were only twenty-five, with a total of 1,700 employees, four of these establishments having more than one hundred, but less than five hundred. This number narrowed down to twenty, ten of which had more than twenty-five men. Since the total number of hands in these ten factories fluctuated between 2,000 and 4,700 during and after the War, and remained fixed at about 3,000 in 1922, the great importance of the two largest enterprises is shown by these figures, which also indicate the variations in the activity and the continual expansion of this industry. If we take into account only the establishments with more than twenty-five workmen, the total number of employees amounted to 1,559 in 1912, 1,932 in 1914, 4,181 in 1916, 4,155 in 1917, 2,977 in 1918, 2,823 in 1919, 4,694 in 1920, and 2,925 in 1922. In 1914, there was a rapid increase in turnover, which resulted in high prices for butter both in the Netherlands and in England, to which the Netherlands supplies 98 per cent of the imports. Belgium demanded more margarine, because her factories were closed; and exports, continuing to increase, found their way to Germany, when the prohibition of importation was abrogated, though only Netherlands Overseas Trust free raw material could be used for the latter country. The home consumption rose to 30,000,000 kgs. The Government had made an agreement with the manufacturers to place a certain brand at government disposal at a low price, and released the remainder of the output from control. In 1916, the export to England greatly increased, the amounts being 77,600,000 kgs. in 1914, 104,000,000 in 1915, and 140,000,000 in 1916, and this growth being connected with the diminished exportation of butter.

The industry, however, encountered many difficulties in obtaining supplies of raw materials and in shipping its products; and England built factories of her own, which induced Netherlands firms to undertake production in that country as well. After the spring of 1917, the activity came to an end, because the supply of raw materials from North America ceased, while England sent just enough for making margarine to be exported for her own consumption. Export, for example to Scandinavia, therefore, stopped entirely. The want of raw materials rendered it necessary to utilize hard linseed oil in margarine. In March, 1918, the Minister of Agriculture, Industry, and Commerce forbade exportation because of the scarcity of fats and oils, whereupon England ceased to send raw materials, so that manufacturers were forced to rely upon those found in the Netherlands. In June, a butter and margarine ration was fixed at two hundred and fifty grams per person weekly, this amount being decreased to two hundred and fifty grams every ten days, after July 8, and to a like amount every nine days after November 12. The home consumption rose to 40,000,000 kgs., and the results to the industry were still satisfactory. After the armistice, from 1919 to 1922, raw materials could again be supplied, and exports soon recovered, even those to central Europe. In 1921, the margarine market was restricted by a serious decline in the price of butter from 3.70 guilders to 2.30 guilders per kg. and by heavy imports of refrigerated butter from Australia and Denmark. In the second half of 1922, the demand increased, but exports to central Europe became almost impossible on account of the unfavorable rate of exchange. The trade statistics show reliable and complete figures only from 1917, the figures for margarine being as follows:

	1917	*1918*	*1919*	*1920*	*1921*	*1922*
Total:						
in kgs.	105,817,944	17,507,647	53,942,955	92,989,108	69,468,155	59,163,000
in guilders	83,647,825	14,246,731	64,763,119	101,082,904	57,631,561	36,246,000
Kgs. to						
Germany	1,373,467	....	24,572,432	30,642,856	4,772,922	480,000
Gt. Britain	103,791,407	17,478,951	26,095,455	51,338,832	57,189,032	49,316,000

According to statistics drawn up in another way, the uncontrolled export amounted to:

	1912	*1913*	*1914*	*1916*
Total kgs.	59,784,000	71,006,000	79,319,000	165,321,895
Kgs. to Germany	152,000	401,000	687,000	2,518,160
Kgs. to Great Britain	55,627,000	65,157,000	71,973,000	158,371,373

These figures show wide divergencies; not only the quantities but also the prices of the exports both to Great Britain and to Germany differ very much, the annual averages of the prices per kg. from 1916 to 1922 being respectively .80 guilder, .80 guilder, .80 guilder, 1.20 guilders, 1.09 guilders, .83 guilder, and .61 guilder. The statistics of production and consumption refer to about twenty enterprises, *i.e.*, to the whole industry, excepting a few insignificant factories. The total production and market value of margarine exclusively were as follows:

1913	88,423,011 kgs.	47,184,394 glds.
1916	171,695,808 kgs.	116,305,180 glds.
1919	80,066,939 kgs.	104,250,801 glds.

The decrease from 1916 to 1919 was caused in part by the diminished export to England, where the largest Netherlands enterprises had established factories of their own.

16. THE FUEL SUPPLY

The Netherlands' great dependence on foreign countries with regard to fuel is clearly shown by the fact that her pre-war consumption of coal was about 10,000,000 tons (more than 1,000,000 of which was bunker coal), whereas the output of the Limburg mines in 1913 was 1,900,000 tons. Of this latter amount, approximately one-fourth was produced by the State mines, Wilhelmina and Emma, and the other three-fourths by six private enterprises, the Orange Nassau 1, 2, and 3, the Domanial Mine, the Willem-Sophie, and the Laura Company. Previous to the outbreak of the War, almost all the coal from the Netherlands mines crossed the frontiers to the neighboring industrial districts. About 14,000,000 tons were imported, of which some 5,000,000, including bunker coal, were exported; of this total amount about four-fifths came from Germany and one-sixth from Great Britain. The continual competition between these two sources of supply and the favorable position near Westphalia ensured the Netherlands a fair price. Besides coal, at least 1,500,000,000 lumps of peat were burned annually before the War, partly as soft peat in factories, particularly in all brickworks and in several establishments near the peat-diggings, especially strawboard and potato-flour works. As the Netherlands could mine scarcely one-fifth of the fuel requisite for her own consumption, it became necessary to force production up as high as possible during the years of the War. This was effected primarily by operating the State mines with the main object of a rapid increase of output; and the working of the third State mine, the Hendrick, contributed materially toward this end. As a second step, prices were so fixed that the private mines likewise were stimulated to a speedy acceleration of production. When prices rose so high in 1917, in consequence of the increasing shortage of coal, that even brown coal could be dug

PRODUCTION AND NUMBER OF WORKMEN IN THE COLLIERIES AND BROWN COAL FIELDS

	Collieries			*Brown coal fields*	
	Production in thousands of tons		*Number of workmen*	*Production in thousands of tons of one thousand kgs.*	*Number of workmen*
	Private mines	*State mines*			
1913	1,455	418	9,715	....	....
1914	1,382	547	9,898	....	....
1915	1,479	783	10,271	....	....
1916	1,686	900	12,460	....	....
1917	1,916	1,092	15,028	12	663
1918	1,997	1,402	18,250	1,483	2,762
1919	1,925	1,476	20,318	1,882	2,662
1920	2,168	1,772	22,874	1,396	1,601

profitably, the brown coal pits were worked, while the production of peat was carried to the utmost degree that the labor available allowed.

To render this rapid increase of man-power possible, the mobilized miners were granted furloughs, and interned Belgian operatives were employed. In the period of the greatest shortage of food, the largest extra rations were allotted to the miners. Though the coal famine was not yet alarming, since imports, especially from Germany, had revived after the slackness in the first months of the War, the Royal National Relief Committee appointed a coal committee in January, 1915, with the task of promoting the supply of coal to the consumers as regularly and effectively as possible, and of checking the inflation of prices. Besides representatives of the Government, this Committee included the leading importers of coal, all but one of the mining directors, and the great consumers. The Committee established a coal office consisting of Professor P. de Vooys, an engineer, as Chairman, and seven members; and this office undertook the distribution of available supplies as equitably as possible among all applicants at one price to all for the contract year April, 1915, to April, 1916, together with the perfect maintenance of the coal trade and its usages. The results were highly satisfactory: in 1915 there was scarcely any fluctuation in prices, and the cost amounted to less than half that in Italy and Scandinavia. The interests of all consumers were protected equally and though every leading coal merchant was affiliated with the Coal Office, each was at liberty to import, use, and sell coal, without its knowledge. It was already clear that some would be unable to obtain the quantities and grades which they desired, and the Coal Committee accordingly undertook to control the Coal Office and to deal with complaints. At the beginning of June, 1915, the sales for the contract year were as follows:

Limburg coal	1,295,790 tons
German coal	4,858,000 tons
British coal	1,237,000 tons
	7,390,790 tons

In addition to all this, about 500,000 tons from the Orange Nassau mine and from some importers not connected with the Office were to become available during this period, but it soon became evident that some of the amounts contracted for were not being supplied. Even in April, there was a deficit of 30,000 tons, and in May, Germany also had fallen considerably behind. About the middle of 1915, that country reduced the quantity allowed to the Netherlands to 40 per cent of the former amount, while England likewise regulated the export to the Netherlands. It was, therefore, a matter of urgent necessity to increase domestic production speedily and to perfect the distribution so as to make the shortage felt as little as possible and to avoid any distress. It was true that imports recovered slightly, aided in part by Belgian supplies, but experience had clearly shown the necessity of having reserves for at least six weeks ahead, to guard against a serious shortage in case stocks should run low; and the coöperation of all interested parties was necessary for this purpose also. To achieve this end, coal was purchased on joint account over and above the quantities distributed, the grades available for this purpose being the Limburg close-burning, gravelly variety, which was almost useless unless mixed with other coal; "gross" coke,[1] which could be obtained cheaply from Germany; and American coal, which was expensive on account of the high freights (from twenty-eight guilders to thirty guilders f.o.b. Rotterdam). Those who participated in this reserve established a limited association named the Mutual Coal Reserve Company, one of their number being the Royal National Relief Committee, which undertook to supply 28,000 tons of Belgian anthracite and egg-size briquettes, a mixture of Scottish and Belgian small coal, to the local relief committees, for delivery to persons without ready money and to the poor. The difficulties experienced and the losses sustained in this distribution caused it to be discontinued in the winters following. Nevertheless, the Company fulfilled its purpose. In 1915, it was possible for independent importers to obtain coal from England, but both the Government and the Coal Office were convinced that the expensive fuel secured in this way would be deducted from the total amount which the British Government allowed for importation. Accordingly, these dealers were required to offer this coal to the Mutual Coal Reserve Company before they were allowed to sell it outside the distribution. In the second half of the year, conditions were such that foreign producers were interested in supplying the Netherlands, and the Coal Office succeeded in obtaining sufficient quantities. New difficulties, however, gave rise to the fear that, in the long run, the Office would lose its influence on foreign countries and on the Netherlands Overseas Trust which was necessary to guarantee a regular supply and distribution of coal. For this reason, the Government Coal Distribution was established by an Order in Council of January 12, 1916; and after this, until the beginning of 1917, a coal famine was successfully averted, and prices were kept low.

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[1] Coke obtained from coke ovens, not from gasworks.

In 1916 the imports for consumption still amounted to 5,691,705 tons of one thousand kgs., one-fourth of which came from Great Britain and three-fourths from Germany; in the years following, the importations of coal and coke were:

	1917	*1918*	*1919*	*1920*	*1921*	*1922*
			(in thousands of tons)			
From Germany	2,012	1,082	772	1,079	1,279	1,193
From Great Britain	312	113	376	235	1,768	4,526
From Belgium	208	13	1,079	30	1,270	463
From North America	....	....	664	1,416	497	....
From Canada	....	....	66	189	56	....
From South Africa	....	....	....	20	11	....
From Norway	....	....	....	....	....	31
Total quantities of coal	2,532	1,208	2,957	2,969	4,881	6,213
Coke	383	227	407	285	200	235

These figures clearly show that it was far beyond the power of the increased production of the country's own mines, brown coal fields, and peat-diggings to stave off a serious dearth of coal in 1917 and 1918, and also that the shortage lasted until 1921, so that it was imperative to continue the activity of the Government Coal Distribution. In 1916, it was still possible to maintain distribution among the consumers, holding good for six months and dating from April, but after that time, supplies became so scarce and uncertain that the allotment had to take place from month to month. The contact formerly existing between merchant and consumer disappeared, though the importers continued to purchase abroad at their own risk. Negotiations with foreign countries constantly became more difficult, and did not remain in the hands of the coal experts. Conditions grew much worse in 1917, when the severe cold made the public nervous, and when the proclamation of unrestricted submarine warfare brought supplies from overseas to a standstill. Stringent rules for rationing households were introduced; and for her stocks the Netherlands was now entirely dependent on Germany, so that the delivery of coal became a factor in internal and foreign politics, prices and quantities thus being conditioned by influences that had no connection with the supply of fuel. The meager amounts led to a strict rationing and to a systematic pursuance of measures for using coal as sparingly as possible. Gas and electric works were placed entirely under government control, so that the inhabitants were compelled to observe the utmost frugality both in heating and in lighting. An ever-increasing number of restrictions was applied to the industries and means of conveyance. In the first place, those activities that were indispensable to the production of the necessities of life were provided with fuel, but attention was paid to economy. Other enterprises were kept in operation as much as possible, though they were obliged to be content with inferior coal, brown coal and peat, all of which were included in the distribution. Those who could afford it used wood and liquid fuel, so far as stocks were available.

The Government Coal Distribution technically controlled economical burning, and enforced observance of various fuel-saving measures, such as focusing labor during the daytime, closing factories that did not function economically, concentrating laundry-work and diamond polishing in a part of their establishments, etc. In 1917 and 1918, the coal famine consequently caused a decrease of manufacture and extensive unemployment in many factories which otherwise would have had an abundance of occupation. The power that Germany could exercise as a coal contractor was felt not only in the price, but after the autumn of 1917 she furthermore claimed a government credit for every ton of coal supplied. To prevent abuses and disorder and to obtain a standard price, now that there was so great a difference between the price of German coal and the cost of production of domestic fuel, the Central Clearing Office for Fuel was established in October, 1917, this being a private limited company on a coöperative basis, contemplating no profit and managed by a Board of Directors represented by the great consumers, the Government, the municipal authorities, the leading Chambers of Commerce, and the Government Coal Distribution. This Central Clearing Office for Fuel financed the fuel monopoly and managed the credit mentioned above, but it did not itself supply coal and did not distribute it. All fuel furnished from abroad or produced at home was delivered to the Central Clearing Office for Fuel at prices approved by the Government Coal Distribution. The latter organization indicated the consumers, and the selling prices were revised monthly, dependent only on quality and without regard to origin or cost, but in such a way that the Central Clearing Office for Fuel worked without profit or loss and without prejudice to meeting several obligations imposed by the Government, such as furnishing cheap household coal, for which, before the establishment of the Central Clearing Office for Fuel, 18,000,000 guilders had been placed at its disposal from the treasury.

After the armistice, the fuel question underwent a great change, but it was soon to become clear that both the coal famine and the great difference in price still existed, and that the war-time institutions must be retained until the beginning of 1921. It was true that the blockade and the coercive economic measures of the belligerents were things of the past; but the universal coal famine and the severe terms of the United States caused difficulties equal to those in the preceding years, and compelled rationing and the leveling of prices. In 1919, Germany and England could not supply as before the War, and moreover after the treaty of peace, Germany was forced to deliver coal to France, Belgium, and Italy. England, therefore, had almost a monopoly, since America was unable to send her expected supplies on account of miners' strikes and transport difficulties. Nevertheless it proved possible to make a delivery contract with Germany at decreasing prices, and Belgium had a large stock which she could deliver only to the Netherlands. In 1920, the German deliveries were much smaller; Belgium closed her frontiers; and England had no surplus, so that the Netherlands was almost entirely dependent on North America. Prices were higher than ever before, and in the second half year the quantities contracted for were not even delivered. The economic crisis approaching at the close of 1920 suddenly caused the consumption of coal to decline to such a degree as to put an end to the coal famine. The consequent fall in prices at the beginning of 1921 led the Government to discontinue the Government Coal Distribution and the measures connected with it.

II

COMMERCE AND NAVIGATION

BY E. P. DE MONCHY

II

COMMERCE AND NAVIGATION

Introduction.

If in August, 1914, any one had foretold that by the middle of 1923 it would still be impossible to produce a complete synopsis of the development of commerce and navigation because the war-period would not yet have come to an end, his prediction would hardly have been believed. Then it was generally expected that hostilities would last but a short time, because the way in which they would be conducted would involve the loss of too many human lives, and financial consequences would necessitate a speedy return to peace. And yet the years which lie behind us, although they may not form a closed period, fully merit close investigation from the point of view of the two branches of human activity with which we are here concerned. This applies particularly to the Netherlands, whose inhabitants have passed through exceedingly difficult times. They inhabit an area which was at first situated between some, and later among many, of the belligerent States; they have business friends on all sides; they know their neighbors, whom they visit in their own countries, and whose languages they understand and in general speak fluently; and from the beginning they encountered great difficulties. The Netherlands carries on an extensive commerce on its own account and at the same time has a large transit-trade, for which it is particularly adapted, while it also possesses a great colonial empire on the other side of the equator which covers an area fifty-five times as large as the mother country itself (1,896,537 sq. km. as contrasted with 34,185 sq. km.). It was inevitable, then, that the position of such a country would at once assume an aspect of peculiar complexity.

It would appear to the writer that the periodical Reviews of the Chambers of Commerce during the war years afford an easy guidance for a historical survey of our subject. If he has not been able, now and again, to resist the temptation to produce extracts from them without indicating the source in each case, he may be forgiven, since he himself was Chairman of the Rotterdam Chamber of Commerce and what appeared in print in the Reviews of that Chamber, was, therefore, published with his own approval. Owing to the War, of course, the general interests of the Kingdom were treated on the same footing as the special interests of Rotterdam. In this case, too, the War strengthened national consciousness: in politics, narrow party-feelings were thrust into the background; and commerce, controlled by Government, ceased to bear a local character. Although ideal motives did not turn the scale, idealism was popular at first, and the belligerents were frequently envied for the moral elevation which would result from marching forward under their national flags; while neutrality was depicted by some in anything but glowing terms.

1. *Government Control of Foodstuffs, Raw Materials, etc.*

When hopes for a peaceful solution of the pending differences began to dwindle even before the outbreak of war, fears arose among the people that it would soon become difficult to purchase provisions or trade-commodities as and when they might be required. Soon this anxiety assumed the character of a panic, and the heavy demand for victuals, fuel, etc., was met by a disproportionate inflation of prices, accompanied and furthered by the accumulation of large stocks. The Government at once took the requisite measures to counteract this. Under the Law of August 3, 1914 (*Staatsblad* No. 351), articles were inserted in the Expropriation Law by which, upon issue of the proclamation regarding the danger of war, Burgomasters were empowered, after special or general authorization from the Minister of Agriculture, Industry, and Commerce, to place an embargo immediately and without further formality on provisions, raw materials for the preparation thereof, domestic commodities, and fuel. The products thus put under embargo, as the burgomasters might determine, were placed at the disposal of the inhabitants of the communes or of business establishments there at a cost whose maximum was fixed by the Minister. Thanks to these measures, the inflation of prices soon came to an end.

2. *The Financial Situation.*

This, however, by no means restored tranquillity to the commercial world. The difficulties of payment and the uncertainty as to what was to happen next engendered the desire in many quarters to follow the example of other States and to declare a moratorium, this wish being, perhaps, increased by the reluctance of bankers to grant credits on easy terms. We may here explain that a few decades ago, merchants used to grant credits to each other. An importer established in the Netherlands paid for goods imported from abroad by issuing his own promissory notes, and in turn he sold to his buyers against their acceptances. If a regular business was done, it was hardly necessary to control considerable means; toward the dates upon which the importer's acceptances fell due, he could discount with his bankers the acceptances of his buyers, if they had not fallen due in the meantime, and any considerable cash outlays occurred only, as a rule, when there was a hitch in the sale of the goods so that the importer's own acceptances fell due before he had received cover from his buyers. Even in the period now under review this method of operating had become obsolete. The very fact that the importer's own capital need not be very large to enable him to carry on his business created a general tendency to rely upon credit from abroad. Losses could thus remain secret for a long time and often proved to be much larger than had been expected if failure ensued or if it became necessary to resort to an arrangement.

The natural consequence was that merchants abroad adopted another system by which they increasingly stipulated cash payment for their goods. If credit was to be granted, this could be done by the banker, who, being generally on the spot, was in a much better position to judge whether the merchant possessed sufficient means to be able to overcome any adverse circumstances that might arise. Evidently this caused bankers' credits to be used more frequently, but it also made the merchant more dependent upon his banker; and because of the fear of withdrawal of credits in view of the political circumstances many members of the commercial community looked forward to a moratorium as their only means of salvation.

At the same time, the banking community was by no means blind to the needs of commerce. Bankers indeed regarded control as necessary, but they themselves endeavored to provide ample means so as to be able to come to the rescue when this appeared to be justified. The danger of upsetting the entire social fabric by a moratorium was thus averted, and it was only later that the superabundant supply of money in the banks proved to be a danger as well. The granting of credits became part of the business of the banks to a much greater extent than before; but this caused very keen competition in this line, so that the enormous losses incurred may be traced to that state of affairs. This entire subject is discussed at length elsewhere in this series, but at any rate the case again proves the interdependence of the different branches of trade in our present state of society.

3. *The Question of Contraband.*

Immediately upon the outbreak of war, it was obvious that the Netherlands commerce and navigation might be faced with extreme difficulties. In the first place, this applied to the transport of contraband on behalf of some one of the belligerents; further, to a blockade proclaimed by one of them, if the regulations concerning contraband were not respected; and, finally, to the neutral carrying-trade of ships or goods for some one of the States in conflict. The threefold differentiation of all goods established by Grotius: absolute contraband (arms, etc.), conditional contraband (goods which may be used for purposes both of war and of peace, such as provisions), and goods useless for warfare, was no longer as simple as it looked; and the Declaration of London had already tried in 1909 to reach a solution of the problem as to what commodities, narrowly defined, should be placed in the various categories, and also as to the treatment to which they should be subject. Another important controversy centered upon the doctrine of the so-called "continuous voyage." By the Declaration of London, absolute contraband could be seized, regardless of whether goods were in transit directly to enemy territory or whether transhipment or transport by land was necessary for the purpose; only the final destination was to be taken into account. This rigid conclusion did not apply, however, to conditional contraband.

When the War broke out, the Declaration of London had not yet been ratified by Great Britain, and neutrals especially were anxious to know what attitude England would take with regard to the principles laid down in that instrument. The British Government made clear their intentions as regards their procedure in this War by an Order in Council of August 20, and, later, by a Proclamation of September 21. Conditional contraband was declared subject to seizure, not only if it was destined for enemy forces, but also for enemy territory, the doctrine of the continuous voyage being adopted as in the case of absolute contraband; and at the same time the number of articles to be considered contraband was extended.

4. *Government Control of Imports.*

This situation necessarily gave rise to the question as to whether the Netherlands, a neutral country, would import goods nominally for its own consumption, but would afterwards pass them on to the enemy, an action which, though not reprehensible in itself, must be checked if the measures named above were not to become illusory from the beginning. Obviously the importation of goods for actual local consumption was bound to become subject to many difficulties and impediments, because, though there were indeed merchants ready to sacrifice their personal advantage to the common weal of the country, there were also a number who considered this unnecessary.

By prohibiting the exportation of a number of goods the Government at first tried to obviate measures which would be detrimental to the provision of supplies for the Netherlands, with all the consequences that would follow; and at the same time care had to be taken that fresh stocks would not become impossible. The Government considered that the first thing which they ought to do would be to control the imports of the supplies most needed, namely, grain and fodder, availing themselves of the aid of commercial firms who knew the trade and had the necessary connections. This led to the thought that it might be desirable to proceed further in this direction, since the supply of commodities for consumption is indeed of primary importance, but a country uses and consumes a great many other things which are really equally indispensable.

It was necessary, furthermore, to weigh the question whether it would be at all possible to suspend work in which thousands of persons were engaged, and to appoint only a few individual government officials to execute the huge task which, with all its articulations, rested in so many hands. The Government was also obliged to consider its responsibility, which might become too heavy; and this gave rise to the thought that an organization might be created which could control the entire foreign trade and which itself would be controlled by the Government. Thus the desires of the belligerents, of which the Government was the first to be informed, would be met through the Government, and not by it.

5. *The Netherlands Overseas Trust Company.*

The creation of the Netherlands Overseas Trust Company was the result of these considerations. This organization, which was established at first on but a modest scale, was soon to rule the entire trade; and we may here repeat what has been said so often, that it was largely due to it that the Netherlands was kept out of the War, and that her people were enabled to continue their work. This Company, founded with the coöperation of the large banks and steamship companies, acted as an intermediary in the widest sense of the word on behalf of the Netherlands merchants for the unimpeded importation of goods from oversea. It did not work for profit, and decided, emphatically, to do no business for its own account. It afforded the guarantee that such goods as it allowed merchants to have consigned to it from abroad, and such articles as would be manufactured from them, were destined exclusively for home use, or for export to Netherlands colonies or to neutral states for consumption there.

The Company's procedure was as follows. When a merchant wished to import goods, he was required to apply for a permit for so doing from the N.O.T., as the Netherlands Overseas Trust Company was soon called; and if he received such a license, he had to sign a contract by which he bound himself to execute the provisions outlined above, and at the same time to appoint a banker who would guarantee the engagements which he had undertaken. This latter point was of great importance, for the banker who countersigned the contract assumed the obligation to pay to the N.O.T., upon its first demand, the penalty imposed on illegal exportation. The N.O.T. thereby possessed two advantages: it knew that its debtor was solvent, and it was guaranteed against any possible resistance from the merchant, who might otherwise allege, in his defense, that exportation had taken place without his cognizance, and perhaps against his express desire. The banker, of course, charged for his guarantee, apart from the commission paid to the N.O.T. It soon became customary for merchants in the Netherlands to demand, as a guarantee from buyers upon the sale of goods, a declaration to the effect that they also would carry out the stipulated provisions. The new buyers applied the same system, and if illegal exports took place notwithstanding this, the N.O.T. simply held the first banker responsible, the latter the importer, and the importer, in his turn, him who succeeded him. In practice, however, all this was not so very simple, for it was not always easy to recognize goods which were to be exported; marks could easily have been altered; and often the goods themselves had undergone some change apart from cases where they had served as raw materials for manufactured articles. The functions of the N.O.T., therefore, were by no means light, and obviously it was obliged to become a very extensive organization. The question which immediately presented itself was whether it was necessary for the goods in question to be imported. Each application, consequently, had to be investigated with reference to statistics, and this was frequently a difficult matter in cases where other than large staple articles were concerned. Moreover, the controlling foreign countries wished to retain their independent judgment, so that the N.O.T. was compelled to remain in constant contact with appointed foreign representatives. The activities of the N.O.T. were still further extended when it also became necessary to control the shipment of goods which had originated entirely in the Netherlands if application was made for export permits for such commodities.

The penalty levied in case of infraction was at once made known abroad, and this caused penalized merchants to be excluded from further transactions by placing them on the "black list," the introduction of this also serving as a weapon against firms and persons whose correspondence gave occasion for it. In the surrounding belligerent countries, large staffs were continually occupied in opening and reading letters, not only for political or strategic purposes, but also to control any attempts to afford economic advantages contrary to their interests.

6. *Increased Profits and the Revival of Banking.*

For commerce this period was very difficult in many respects. It should not be forgotten, however, that when a merchant had succeeded in getting his goods into the country, he was certain of good profits, for since so much care was taken that there should not be a plethora of stocks, the holders were in a favorable position, unless, of course, they abused it, in which case the Netherlands authorities interfered.

Ordinary commerce was shifted, quite apart from the rise of such undesirable elements as are always observed in time of war. The difficulty of importation, the resulting scarcity, and the large profits accruing to fortunate holders caused what was called "the second hand"; *i.e.*, the ordinary clients of importers, to combine for the purpose of themselves importing goods. It was much easier to admit that they bought merely for their own use, and, as a matter of course, they were to be considered as direct consumers much more readily than the importing houses, who had first to prove their good faith. They were not exempt from the obligation to appoint guarantors, but first impressions often make a great difference, and such was frequently the case here.

Netherlands banking was greatly extended during this period. As we have already observed, documents on goods consigned to the Netherlands were no longer presented with long-term bills for acceptance attached; cash payment was not only required, but more and more was demanded in advance; *i.e.*, before shipment, since exporters abroad regarded the business as too risky to effect shipment before they were in possession of cover. Here the merchant had obviously to have recourse to his banker. The trade, as a rule, does not operate with sufficient means to invest money on a large scale prior to obtaining the counter-value in merchandise. The banker, knowing his client, may agree to grant an advance in this form; but his means again are limited, so that he in his turn must provide for an extension. This was certainly one of the chief reasons for the fact that the capital of many banks was expanded on a large scale.

It is well known that when a merchant has once acquired the habit of availing himself of bank advances regularly and to some considerable extent, he is apt to make permanent a situation which at first was only temporary and to establish his normal business on a footing which formerly he would certainly have considered much too large. On the other hand, the banker, who now has more capital at his disposal, and whose business is thus extended, proceeds to decentralization, so that he must appoint submanagers who are in charge of branches, who in their turn feel much confidence in the financial strength of the house in question, and who, obviously, wish their branches to operate energetically. Accordingly, business flourished, and trade and industry made large profits, whereas the apprehension that a speedy end of the War would put an end to these abnormal circumstances gradually faded into the background. It might easily be supposed that the granting of credits would assume proportions which nobody had expected, but which were destined to avenge themselves all the more severely.

7. *Profits and Difficulties of Navigation.*

Together with commerce, navigation enjoyed a period of unexampled prosperity. Whereas the prices of merchandise left more than the margins which had prevailed hitherto, the shipowners were not obliged to be satisfied with freights that afforded a modest profit. In many cases the question was no longer the rate of freight at which goods could be shipped; the problem was whether space was available; the freight rate was a matter of detail. It was impossible to expect the shipowners to restrict too much their desire for extension; soon the shipbuilding yards could scarcely execute their numerous orders, and the banks were again called upon to supply the capital required.

By virtue of a Decree of November 3, 1914, Great Britain declared the entire North Sea included in the theater of war, thus involving serious dangers for neutral shipping as well. By another Decree, dated February 4, 1915, Germany made the waters round Great Britain and Ireland, including the Channel, part of the theater of war, and at the same time proclaimed that after February 18, 1915, neutral ships would be in danger of attacks aimed at British vessels. The great difficulties which now threatened traffic were fully considered by the Government, and, fortunately, steps were taken to fix routes which greatly restricted the danger to which the vessels were exposed. At the same time great difficulty arose from the enormous advance in the cost of bunker coal. Whereas the shipping trade had formerly had an abundance of German and British coal, Germany soon fell behind in her supplies, and most outgoing vessels had to proceed to Great Britain for bunkering. At the same time prices rose considerably. The insurance premium against seizure likewise increased, and the wages to be paid had to be raised in proportion to the greater risk of life of the crews. Moreover, protracted delays were encountered in such ports as could still be reached, for the British harbors were crammed; and since there was a lack of labor for creating order in the chaos, many days sometimes elapsed before a ship's turn came. Obviously these circumstances resulted in greatly enhanced freight rates, and these in their turn reacted upon the prices of commodities.

8. *Commercial and Political Effect upon the Netherlands East Indies.*

The situation in the East Indies also requires some comment. Although the eastern empire of the Netherlands was situated at a great distance from the theater of war, it was soon obliged to contend against the consequences of the dislocation of commerce and traffic. The first results, however, were entirely opposed to those experienced at home. Whereas in general, prices rose at once in the Netherlands, most export products in the East Indies declined in value. This was caused by the apprehension of a general suspension of all exports, increased by misgivings as to the mode of providing for financial needs, which were always met from Europe.

For the East Indies the War immediately had other consequences as well. When produce could no longer be shipped regularly to Europe, other outlets were naturally looked for, and it was to the credit of the Netherlands companies that three of them at once opened a direct service from Java to New York.

Here, involuntarily, a subject comes into the foreground which presented itself in so many forms during the War. We refer to the hastening of events which under ordinary circumstances would have developed at a much slower pace. When we consider the quick rate at which social situations have been altered, and when we take into account the evolution of technical science and of industry, we find ourselves in the presence of changes which in quieter times would have come about very gradually.

The Netherlands East Indies had long striven for independence; they desired to possess their own industrial enterprises, and they wished to be less dependent commercially upon the mother country. The years of war largely contributed to accelerate these changes, and the opportunity for direct shipment was one of the symptoms pointing in this direction. From direct shipment to direct sale is but one step in a road in which more progress will perhaps be made, and partly has already been made.

Another matter of concern for the interests of the Netherlands East Indies consisted in the defective means of telegraphic communication during the opening period of the War, this even being entirely interrupted for a short time. Owing to the additional uncertainty with regard to the march of political events, on August 17, 1914, the Board of the Netherlands Trading Company in Amsterdam convened the representatives in the Netherlands of nearly all the large estate companies in the Netherlands East Indies to deliberate upon measures to be taken in case telegraphic communication with the colonies should be broken. The meeting, which was attended by about a hundred persons, including the Assistant Secretary of State for the Colonies, decided that committees should be appointed in the main agricultural centers so that, in case of need, they could look after the interests of the estate companies, place them before the East Indian Government, and advise the estate enterprises as to all measures for keeping business going. These committees were constituted for four centers: Batavia, Semarang, and Surabaya on the island of Java, and on the east coast of Sumatra; but circumstances rendered it unnecessary to make a lasting use of their services.

9. *State Insurance against Foreign Interference with Commerce.*

During 1915 a long duration of the War was increasingly taken into account in the Netherlands as elsewhere; and later we shall show that this country was destined to suffer no small losses. The neutral carrying-trade was a matter of grave concern. The measures taken by Great Britain and by Germany were followed by an Order in Council dated March 15, 1915, and by a French Decree of the same date, which practically prohibited all transportation of goods destined for or originating from Germany. To give Netherlands companies the greatest possible protection from attacks, ships were painted with distinguishing marks which could be made out a great distance; the flag by itself did not appear to afford a sufficient guarantee.

Covering the risk of molestation was evidently attended with grave obstacles, and the Government was not blind to these difficulties. On February 24, 1915, the Minister of Agriculture, Industry, and Commerce introduced a bill "for concluding insurance agreements against danger of molestation under the present circumstances of war." This bill, which was somewhat altered after discussion, provided an opportunity for Netherlands underwriters to reinsure their molestation-risks on Netherlands ships, as well as on merchandise in neutral vessels in which Netherlands interests were concerned, on condition that the underwriters would themselves assume a tenth part of the risk. In case, despite this arrangement, the war-risk could not be placed with private companies, the State itself could act as underwriter. For both forms of insurance the risk of the State was limited in that not more than 2,000,000 guilders could be underwritten on a single hull. The bill was passed in May, 1916, as the "War Molestation Insurance Law of 1915" and came into effect on February 9, 1917. It provided that: (1) hull-insurance could be effected only on Netherlands vessels, and cargo-insurance only on Netherlands goods loaded in a neutral vessel where Netherlands interests were concerned; (2) the risk of the State must not exceed nine times the amount underwritten by insurers; (3) the conditions of the original insurance were not to diverge from rules to be established by the Minister; and (4) the premiums of the original insurance must not be lower than those fixed by the Minister.

The Minister was empowered to reinsure and was likewise authorized to effect insurance directly whenever Netherlands subjects, interested in Netherlands ships or in cargo carried by neutral vessels, could not find sufficient cover against the risks of molestation, and when it was necessary to maintain connection by sea or to transport certain goods. The law limited the liability of the State, in case of hull-insurance, to two million guilders per vessel. Finally the Minister was enabled to reinsure risks accepted under the law, and permanent representatives were appointed in Amsterdam and Rotterdam to advise him.

When the commission was dissolved on December 24, 1920, it was a matter of record that during the period from March, 1917, to December, 1919, the Government covered insurance for a total of 516 million guilders on hulls and 25 million on goods; while fully 12 million were paid for damages incurred as contrasted with 18 million received in premiums.

10. *The Laws on Exporting and Commandeering Ships.*

We may here mention also what was called the "Ship-Export Law" of March 18, 1916 (*Staatsblad* No. 139). This forbade the transfer of Netherlands ships to foreigners or to foreign countries whether by sale, hire, or otherwise, or the conclusion of an agreement to that effect, without previous permission from the Minister for Agriculture, Industry, and Commerce. The prohibition was extended to ships in regard to which an agreement had been made before the law had come into operation; and it likewise forbade the exportation of ships already transferred to foreigners. The purpose of the law was obvious. The excessive prices which were obtainable might cause the Netherlands to lack sufficient space, and the sale of fishing vessels on a large scale was especially feared because at this particular juncture these boats could provide so considerable an amount of food for the people.

The "Law on Commandeering Ships" (February 10, 1917; *Staatsblad* No. 211) interfered equally in the free exercise of the shipping trade, and perhaps even more so. The Government, in fact, deemed it necessary that it should itself control the space required for the transportation of goods purchased by it on behalf of the people; and it wished the Minister given authority to commandeer the entire space of a Netherlands ship, so that the owner would be obliged to place it at its disposal for a special voyage for the transportation of government goods. We may here consider this law somewhat more closely.

Even when the Ship-Export Law was discussed, the Minister for Agriculture, Industry, and Commerce had calculated that, in view of the wide detour which vessels were obliged to make, he must keep about 650,000 tons dead weight afloat for the transportation of cereals and fodder, whereas he had only 635,000 tons at his disposal. Under the Law on Commandeering Ships, vessels could legally be taken over for a given cargo at a rate, also established by law, which would guarantee a reasonable margin of profit to the owners. Originally such action was to be taken only for goods which were to be imported by the Government, and in regard to which the distribution had been settled. A commission was instituted to advise the Government on all matters regarding the law, and a second commission was appointed with the task of fixing the rate of freight legally if no amicable agreement could be reached.

For the transport of cereals, 125 ships were at once commandeered, but most of these were not available because they were detained in North America and later were seized under the Right of Angary,[1] while others could not sail, partly owing to obstacles and subsequent difficulties in the United States. Only twenty-nine ships, with a total dead weight of 170,000 tons, accomplished the journey contracted for and brought in about 140,000 tons of grain. Furthermore, some vessels were commandeered to carry pyrites from Spain, as well as coffee and cocoa. Space was also required for rice as a popular article of food, four ships belonging to the Indian lines being commandeered for this commodity, though special circumstances prevented this from being carried out. For the sake of completeness, we may further mention the commandeering of a ship to carry timber for the building trades. In the meantime difficulties had arisen in the United States with regard to the loading and sailing of commandeered grain steamers lying there, while all traffic in the North Sea was stopped on July 4, 1917, because of the alteration in the closed area. Commandeering for the transportation of grain was, therefore, suspended, and the system was not resumed until May 6, 1918.

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[1] See below, p. 152.

Under an amendment of the Law on Commandeering Ships of May 23, 1917, the Government was empowered to extend its seizures on behalf of all goods for which official interference was deemed necessary. This change, generally speaking, was more useful for ensuring a proper distribution of the space still available than for fixing prices. The charters contracted and the rates of freight were generally approved for such transportation, and all outgoing vessels were commandeered, thus making possible a proper assessment of space as well as of freight rates.

As has been observed above, it was not until May, 1918, that it again became feasible, after protracted negotiations with both groups of belligerents, to obtain grain from North America. The quantity, indeed, was not very large, and vessels were allowed to sail from there only if another boat of equal capacity left the Netherlands at the same time; but up to the armistice it was possible to obtain grain cargoes for the seventeen ships commandeered, almost exclusively for the voyage from the United States. When, during the blockade, it appeared that a convoy might be sent to the East Indies, the Law on Commandeering Ships was altered so that vessels could be commandeered for that route as well, and in July, 1918, this power was extended to cover transportation from and to the Netherlands, the convoy, in fact, sailing as "commandeered." After the conclusion of the armistice, navigation immediately revived, and at the same time the Law on Commandeering Ships ceased to operate.

11. *Government Control of Transportation.*

The task of enforcing the law which, up to July 1, 1918, had been carried out by the Government Grain Bureau, and after that date by the Bureau for Navigation, was transferred to the Government Navigation Bureau on December 1, 1918. The task of this Bureau to which an advisory council was attached, was fourfold, consisting in the execution of the Ship-Export Law, the enforcement of the Law on Commandeering Ships, the apportionment of the remaining shipping space, and the supervision of the freight rates.

The framing of an agreement with the Union of Netherlands Shipowners for designating vessels for particular goods and routes was at once taken in hand; and in order to ensure smooth operation, the owners established a small office next to the Government Navigation Bureau. This guaranteed the greatest possible economy in the use of ships, and the small office furthermore coöperated in fixing freight rates, etc. In the interests of speed it was arranged that these rates for all ships to be operated on behalf of the Government would be fixed in concert with the Government so that they would be officially commandeered only if such rates were not accepted by the owners.

Government transport was restricted chiefly to grain from North America, coal from the United States and Canada, fodder from North and South America, and saltpeter from England. There were also a few other articles of less importance, and occasionally a vessel was employed for repatriating French refugees and prisoners of war. Since nearly all the shipping space was required for the transportation of grain, fodder, and coal, it was very difficult to determine what vessels could be set free for other purposes, especially as the available mercantile fleet had further been greatly reduced by the angariation applied in March, 1918. Ships of a dead weight less than 2,200 tons were eliminated at once because they were either too small or too uneconomical for the American trade. Since, furthermore, it was urgently necessary to reëstablish commerce with the Netherlands East Indies and to ship the goods which had accumulated there, only four ships were commandeered from each of the two Indian lines, and the remaining vessels could be placed on the regular Indian runs. It was, indeed, highly important for the Netherlands to resume normal services, because competing countries had captured the trade. At all events the large lines to America; *i.e.*, the Holland-America and the Royal Dutch Lloyd, had to reopen regular traffic. At first, therefore, some vessels were liberated, and others were soon added to the extent of half their space; but all ships were commandeered which were used for the general carrying-trade.

As already mentioned, the control of freight rates was likewise within the province of the Bureau, and repeated discussions with the owners of regular lines resulted in a gradual decrease of these rates. In the distribution of space, which at first had to be governed with a view to the import permits issued by the Netherlands Overseas Trust Company, preference was often given to certain goods. On behalf of the city authorities of Amsterdam, an advantageous contract was concluded for the carriage of rice and fish, and the Bureau also acted as an intermediary for the transportation of exports of flower bulbs and plants. All this, without direct pressure, helped to lower the freight rates all along the line.

By the middle of 1919, the ships which had been seized under the Right of Angary were gradually released, and the Government could thus free such vessels as were less profitable. The limit of 2,200 tons dead weight, below which no boats were commandeered, was raised to 3,500 tons; but the Government still employed the majority of the ships which they had commandeered, the total on February 1, 1920, being eighty-two, with a total dead-weight tonnage of 421,484, eleven vessels, of 89,626 tons dead weight in all, being employed to the extent of half their space by the Government, the grand total thus being 466,297 tons dead weight.

Freights began to decline in 1920, and gradually the charges for uncontrolled ships even fell below the government rates, so that the advantage of the Law on Commandeering Ships disappeared, while the abundance of space offered rendered further commandeering superfluous. Nevertheless, the Bureau was maintained so as to be prepared if circumstances should change; but in May, 1923, the Law was finally repealed.

As a summary, we may say that, during the operation of the Law for Commandeering Ships, an average of about one-third of the available cargo space was employed by the Government. The measure, therefore, was of far-reaching importance, and it has been deemed useful to consider it in some detail. We may here note also that we have been mainly indebted to M. P. S. van't Haaff, Inspector of Navigation in General Service, for the information given above.

12. *The Netherlands Export Company and Its Operations.*

We may now proceed to deal with the establishment of the Netherlands Export Company, which was soon called the "N.U.M." (*Nederlandsche Uitvoer-Maatschappij*). During the opening months of 1917 it was feared that the Government would subject all Netherlands imports and exports to centralization. In May, 1917, a bill was actually introduced by Royal Message, purporting "to take measures to centralize the management of goods traffic with foreign countries so as to regulate exports in accordance with the requirements of the moment, to further the importation of goods required in this country, and, if export goods can be sold at higher prices than in the case of sales for home consumption, to make the export of such articles contingent upon financial or other conditions."

The introduction of the bill created much anxiety in commercial and industrial circles. It was not that government control was feared, but there seemed to be an alarming possibility that the measures contemplated would afford financial advantages to the Government Treasury. It would be easy for the Government to substitute itself for the merchant and to take from him such profits as seemed to be his due from the experience of many years; and it would also be dangerous to disregard the merchant's own training and have a corporation do the work which a large number of individuals had built up, each within his own province and by his own connections. General centralization was not, however, put in force, and exports were merely placed under control by the establishment of the Netherlands Export Company. The fact that this supervision was not undertaken by the Government, but by a semi-official corporation, was based upon the very principle which had led to the formation of the N.O.T.; *i.e.*, that it was undesirable for the Government to assume a too direct responsibility toward the belligerents. The Law of September 1, 1917 (*Staatsblad* No. 576), was adopted in consequence of these considerations.

Under the Memorandum of Association, dated October 15, 1917, the Netherlands Export Company was established with a fully paid-up capital of 5,000,000 guilders, this amount, as proposed by the

Government, being subscribed through the Chambers of Commerce in lump sums of 25,000 guilders each by private persons and corporations who knew beforehand that they would never obtain a higher rate of interest than 5 per cent on their capital, but who, on the other hand, could feel sure that their money was safe, being in a measure entrusted to the State. The way in which the money was subscribed gave ample grounds for this feeling of security, and when for a moment there was a hint of the possibility that a reduced amount might be paid back in the end, this was felt to be rather a remote contingency. The apprehension, indeed, proved unfounded, and, as a matter of fact, 90 per cent was returned, the refunding of the remaining 10 per cent being subject only to the liquidation of a few transactions. Interest at the rate of 5 per cent has also been paid regularly.

At first, there was no obvious necessity of a comparatively large capital for a company which was not to trade on its own account, and whose activities were restricted to granting export permits; but it soon became evident that its operations could not be so restricted. In this connection the first Annual Report says: "The year 1918 has, in fact, been the first during which the company has operated, for it was not until the Royal Decree of December 22, 1917, became effective, as from January 2, 1918, that the company was authorized to transfer export permits by endorsement and to make those transfers subject to conditions for its own benefit."

In regard to goods traffic with foreign countries, two main currents claimed attention. In the first place the general purpose was to bring production and consumption increasingly under government control and guidance, and to aim, as much as possible, at the accumulation of stocks of provisions and other commodities which came under consideration for that purpose. On the other hand, and contrary to the intention first named, it was necessary, despite continued difficulties in meeting the requirements of the country, to try to prepare for a revival of private initiative and for dispensing with government interference wherever possible. Though at first this was a matter of principle rather than a reality, yet from the moment of the conclusion of the armistice between the belligerents in November, 1918, a new stage of actual significance was reached. The first motive, combined with a constantly diminished production of agricultural and industrial articles, obviously sought to reduce exports to a minimum, while the second was obliged to keep in view a vigorous furtherance of exports and was bound, therefore, often to clash with the arrangements made necessary by the first.

Until shortly before the armistice, when the tendency both in the Netherlands and abroad was to accumulate the largest stocks possible, high prices could be obtained for the limited number of commodities available, since foreign governments had not applied restrictions. Soon after the cessation of hostilities the situation changed, and the prices of many articles of export fell considerably, so that for some, owing to importation or to other causes, it was almost hopeless to obtain a covering price abroad. Up to November, 1918, it had, therefore, been possible to enjoy fairly considerable financial advantages from the endorsement of export permits, and despite restricted shipments, the Company was in a position to obtain no inconsiderable receipts from that source. After the armistice, however, a change set in, and although the exports and, consequently, the number of export permits might be expected to increase gradually, the financial conditions offered by the Company must, at least in most cases, be reduced to a comparatively small percentage connected with their working and other expenses.

During the whole of 1918 the regulation of the exports of agricultural and horticultural produce was subject to the terms of the "Agricultural Agreement" concluded by the former Agricultural Bureau with Great Britain (The British and General Trading Association, Ltd.), and of the "Provisorium" made by that Bureau with Germany (*Deutsche Handelsstelle im Haag*). These agreements carefully fixed the proportions in which the exports of those products were to be divided between East and West. During the latter months of 1918, negotiations were carried on in London regarding a general revision of the former arrangement, and a fresh agricultural agreement was concluded, the "Provisorium" being abrogated in this connection.

When the Company started operations no satisfactory arrangements existed with regard to exports of fish; only the "Herring Agreement" concluded by the Union of Shipowners was still in force. Since repeated difficulties arose, an agreement on this matter, known as the "Netherlands Fishery Agreement," was reached between the British, French, and Italian Governments and the Netherlands Export Company. In consequence both of the necessity of providing for home consumption and of the difficulties against which fishing had to contend, exports during 1918 had been relatively meager.

About the beginning of 1918 the necessity of a large capital became obvious when the Company took over the credits which had to be granted to Germany in return for her supplies of coal, iron, and steel. Since, however, the Company's own funds could not provide for these credits, the Netherlands Minister of Finance declared himself prepared to guarantee 100 per cent of the advances which the Netherlands Bank would allow the Company for the purpose. In August, 1918, in accordance with the Government's intentions when the Company was founded, it was further decided that the Company should also assume the credit of 24 million guilders granted to Austria-Hungary, this also being connected with the importing of merchandise needed in the Netherlands. As security for these two credits, German, Austrian, and Hungarian 5 per cent treasury bills, redeemable in three years, were deposited, the value (as regards the latter) exceeding the original amount by 30 per cent. For the German credits, promissory notes were further taken to the nominal amount of the treasury bills, the notes being also signed by one of the banks of the German group; while the Austrian and Hungarian bills were guaranteed by banks established in those countries.

The Company had been obliged to assume an additional financial burden because of the conclusion of another credit agreement which had its origin in the contract for the supply of fuel. The consequent obligations for the Company consisted in granting a credit of thirty guilders for each ton of fuel to be imported during the months from August to December, both inclusive; and an amount of over ten million guilders was required for the purpose.

In 1919, during the armistice period, the export trade of the Netherlands gradually revived, and the extraordinary profits disappeared. The Company now decided to levy, as a rule, only 1 per cent of the invoice value. After the conclusion of the preliminary peace between the Allies and Germany, the General Agreement was abrogated, and the Agricultural and Fishery Agreements came to an end. The Company need now consider only the desires of its own Government, which was constrained to maintain a certain measure of control over exports so as to provide for home consumption and the regulation of prices. The granting of credit was again increased during the year in connection with further supplies of iron and coal.

In the meantime, as early as the end of 1918, credits had been promised by the Netherlands Government to Great Britain (75 million guilders), to France (30 million), and to Italy (18 million); and the Netherlands Export Company undertook to act as the intermediary for carrying out these agreements, profits, and losses remaining for the account of the State. In accordance with these arrangements, credits of over 37 million guilders were granted to the United Kingdom, this debt being fully refunded in 1919. To France the entire amount of 30 million guilders was paid, whereas Italy did not avail herself of the credit.

All these regulations interfered drastically with the ideas of liberty prevailing in the commercial and shipping circles of the Netherlands, who had received through freedom a development to which they pointed with a certain pride. Commerce and shipping, working for their own profit, knew that their gains likewise benefited the commonwealth; the merchant, seeing that a demand for a given commodity existed or was anticipated, took measures to meet it; the shipowner provided the means of transportation; and thus affairs were managed to the satisfaction of all. This liberty, however, was restricted by the way in which the Great War developed. The struggle was no longer merely between armies, it was a conflict between nation and nation, and the consequences of the War were designedly brought home to the citizens themselves. Under such circumstances there was no more room for the old and tried principles of liberty, and neutrals were faced with difficulties unknown in previous wars. The Kingdom of the Netherlands, however, was blessed with a Government which knew how to take the altered viewpoints into account and to frame such measures as were calculated to meet the situation.

13. *The Effect of Hostilities on Netherlands Trade and Industry.*

We may here permit ourselves a brief digression. Even in 1915 a long duration of hostilities was by no means anticipated; but, nevertheless, the consequences of the way in which the War was waged were felt everywhere. Formerly it had been a well-known fact that neutral trade was spurred to greater exertions since connections between the belligerents were more completely severed; but we have already noticed that times had changed in this respect as well, and that neutral trade had become subject to quite peculiar difficulties. Obviously these disadvantages were not restricted to the parties immediately concerned, but influenced large circles and unfavorably affected the budgets of the communes. In particular, those which were largely dependent upon all receipts connected with navigation and everything appertaining thereto were hit very hard, and, as will easily be understood, a tendency arose to increase the dues, since they could now be calculated only on a smaller quantity. The interested parties pointed out that the authorities should resolve above all not to lose sight of the temporary character of these increases, but subsequent events showed that little attention was paid to such warnings. In this connection we must not forget that the heavy taxation which was later to be the source of so many complaints, also originated in this period. We cannot here discuss this matter in detail, but we may point out that as yet there was no question of serious opposition to all these depressing prospects. In 1915, it was generally expected that the end of the War would herald a period of unexampled revival; that the feelings of enmity would not disappear with the termination of hostilities; and that the former enemies would still try to avoid each other. This would open new fields of activity for the neutrals, since foreign nations would avail themselves largely of their mediation so that the Netherlands must be provided betimes with what would be needed to meet the many requirements of the new period. Great difficulties were encountered, and heavy burdens must be assumed; but there was a conviction that all this would soon be a thing of the past, and that the time would come when those who had prepared themselves most seriously would reap the greatest advantages.

This consideration applied not only to commerce and shipping, but also to industry. The latter, thrown upon its own resources, showed itself capable of more than what it may have been conscious of; and it hoped, after the War, to penetrate into outlets which formerly had been monopolized by the belligerents, but which might not easily be regained after the struggle. The losses of capital and labor in all the warring countries, furthermore, was expected to give rise to an unavoidable increase in the cost of production, which would mean an advantage to those who had remained neutral. Among the many prognostications which were not realized, the anticipations of those days occupy a prominent place.

In the course of our survey, this matter will have to be considered again; for the present we merely sketch in broad outline the general feelings of that period. There was a conviction that the end was in sight; there was confidence that golden days would ensue for those who had kept their powder dry if—and this appeared to be the main point—serious preparation was made beforehand.

14. *Extension and Improvement of Netherlands Waterways.*

The preparations to which allusion has just been made included an extension of the seaports of the Netherlands. The gradual augmentation in the tonnage of ocean steamers and the consequent increase in their draught; the deepening of the Suez Canal and the anticipated opening of the Panama Canal, which had been planned for vessels drawing twelve meters, had, even before the War, shown that, if the Netherlands was not to remain behind, she must improve the connections both of Amsterdam and of Rotterdam with the sea sufficiently to enable these ports to permit the entrance of large modern steamers.

In 1915, a bill was proposed which showed that these matters had been studied, and it seems advisable to discuss this in somewhat more detail. When previous measures had been introduced for improving the ship canals connecting these cities with the sea, the Government had claimed contributions in money from the seaports which were primarily likely to benefit. Two motives could be alleged for defending this point of view. In the first place, it would be to the interest of the State to receive financial support; but, in the second place, the seaports themselves might be supposed to be better judges than the government authorities as to the importance or, rather, the necessity of the expenditure. They would naturally be more conversant with the requirements, and if they agreed to financial sacrifices, this would show that moneys would not be voted from what some might call an inclination to undue local pride; if they considered heavy State expenditure necessary, they could prove their sincerity by contributing money themselves. The principle had already been established, but the bill of 1915 stressed it still more clearly by fixing the desired share at a third of the cost and by expressly stipulating that the law would be carried out only when the seaport in question had agreed to make its own contribution.

Amsterdam at once voted its amount for the North Sea Canal; but in Rotterdam events ran less smoothly for the "New Waterway." It was not until 1917 that the Minister received this city's promise to the same effect, and this only when commercial and shipping interests had placed a considerable percentage at the disposal of the authorities. Such a condition again clearly shows that the hopeful expectations of 1915 had not yet disappeared. The hesitation of the city board, indeed, was quite explicable. The profits then accruing to commerce and shipping were very large, but with the municipal administration the case was just the reverse. Small transactions and small shipments with very heavy profits afforded large gains to the merchants and shipowners, but since quantity was the main consideration with the port authorities, the latter had to struggle against the consequences of greatly reduced receipts. Moreover, these great profits could not fail to arouse jealousy, especially when they were, as usual, exaggerated; and it was constantly forgotten that not all gains could immediately be considered and booked as such.

We need not enlarge here upon the details of the further deepening of the "Waterway," or upon the fear that the danger of inundations for that part of the Netherlands which lies below sea-level would be increased by dredging, thus giving high tides an easier access to the river. After careful and extensive investigations, a commission of experts pronounced that apprehension unfounded. Suffice it to say that a depth, at high tide, of 11½ meters, and ultimately of 12½, is proposed.

15. *The Coal Problem.*

Both during and after the War the supply of coal was a matter of grave concern. The mines of the Netherlands province of Limburg had been greatly extended during the years before the War, and in particular those worked by the State had shown a considerable increase in output. The Limburg mines, however, did not supply even a third of the Netherlands requirements, and this product is not adapted to all industries, for the construction of ovens largely determines the sort of fuel that can be used. Professor Treub, in his *Oorlogstyd*, from which we here cite, points out that during the first months of the War much uncertainty prevailed in the Netherlands with regard to the importations of German and British coal. Even apart from the question of household requirements, the issue was of paramount importance. The Report of the Rotterdam Chamber of

Commerce for 1915 likewise refers to the anxiety in the early months of that year regarding obstacles in obtaining fuel.

When we examine statistics, we find that the imports of coal, coke, coal-bricks, lignite, and lignite-bricks into the Netherlands were as follows:

	From Great Britain and Ireland	*From Germany* (*in thousands of tons*)	*From Belgium*
1913	2,034	17,919	512
1914	1,769	14,211	330
1915	1,795	6,029	2,019

Shipments from Great Britain, as has repeatedly been pointed out, were greatly hindered, and Germany threatened to prohibit exports unless the Netherlands canceled some of her interdictions, especially with regard to agricultural and horticultural produce. The Coal Commission was instituted in consequence of this situation, its task being regulation of the supply of coal, while a smaller commission, the Coal Bureau, was entrusted with the actual management. The coal-merchants who had joined the Bureau offered fuel to the consumers through the Bureau, which did not conclude contracts itself, but investigated the situation so as to further a reasonable distribution of available stocks and to obtain sufficient supplies at fair prices. Obviously the Bureau did not look with favor on simultaneous imports of coal effected by merchants who had not joined it, for this endangered equitable distribution, and the Bureau would be unable to import as much as it otherwise would because the belligerent States wished to control our imports entirely, and to restrict them, with inflation of prices as the possible result. Meanwhile the main point was to import coal, unless several factories were to close down with a consequent unemployment which at that time must be prevented as far as possible.

When the Bureau had functioned for some months, the fluctuations of arrivals had been studied, and it became necessary to reckon with the possibility of a temporary, though serious, collapse of imports. The Bureau, accordingly, endeavored to establish a Mutual Coal Reserve Company, but this project was not approved by the producing countries, where many difficulties had arisen in regard to the supply of coal. It was, therefore, dropped, and after a few months the transactions already effected were liquidated.

The Coal Bureau was replaced in 1916 by a Government Coal Distribution Bureau. The task of this latter organization, difficult at best, became almost impossible, without committing injustice, when the prices of foreign coal advanced without affecting those of the native fuel from Limburg. Toward October, 1917, in fact, foreign costs were about three times as high as in Limburg. Distribution of coal, when purchase prices were so divergent, would have meant favoring one client above another, and the accusation of arbitrariness would have been unavoidable. A plan was then evolved to establish a new office which would purchase all coal and would—this being the main point—charge an average rate to all buyers based upon the total amounts paid for foreign and native coal together. This price would, furthermore, also depend upon the credit claimed by Germany as a compensation for the coal which she was to furnish. This office was called the Central Office for the Administration of Fuel, Limited. It was established at The Hague and bore a private character inasmuch as its capital was privately subscribed, though the shareholders were not entitled to more than 5 per cent interest, surplus profits being handed over to the Government.

The Company did not always operate in the same way at different times. During the first period, from October 1, 1917, to April 1, 1918, different prices were charged to two classes of buyers, according to whether they also became interested in the credits to be granted to Germany or not.

The buyers included in the former category, *i.e.*, the great majority, had to pay 9.25 guilders per ton above the average prices already noted toward the credit to be given to Germany. The smaller consumers, those who took less than 500 tons annually, formed the second category, but generally they remained unknown to the Company since deliveries were mostly made through the Fuel Commissions. As it was peculiarly difficult to ask them to pay an excess for the credit to be allowed to Germany, it was decided to exempt them from the extra sum and to charge them only an additional 3.75 guilders per ton by way of indemnity. The credit granted to Germany was, therefore, paid by the large buyers, and this was included in the prices which they gave for the coal; but they were to be refunded the excess when Germany should repay the moneys granted her on credit.

The State purchased its fuel in the same way to retail it to its organs, the Fuel Commissions. It would be a mere matter of detail that the Office invoiced directly to these commissions for the sake of convenience if we were not bound to bear in mind that household fuel was, in fact, invoiced below the average purchase price, the State being responsible to the Office for the difference, which again increased administrative labor.

These statements apply to the first period of the existence of the Office. The second period, from April 1, 1918, to December 31, 1918, differed from the first in that the office was not obliged to make further advances to Germany. Since, however, during the first two months of the second period this point was not sufficiently clear, the excess was still charged, but was refunded when the Office was exempted from granting credit advances. The supplementary price of 3.75 guilders to the smaller consumers was required only during the first month, and this also was subsequently returned in the form of a reduction in price.

For the sake of completeness we may here note that the credits granted to Germany were now put through the Netherlands Export Company, already mentioned.

In addition to the change in prices because of the disappearance of the credits which the Office was to advance to Germany, this second period was marked by a considerable modification of the relation of the Office to the State. The Minister desired the larger consumers to carry the burden which the Government had assumed; viz., the cost of supplying household coal to the people at reduced prices. Instead, therefore, of asking an average rate based upon the purchase cost of Limburg and foreign coal, the Office was obliged to charge an extra rate per ton sufficient to cover the losses on the cheap supplies of such fuel.

The activities of the Office were further extended by including lignite in the equalization. It was, however, less easy to carry this decision into effect than might at first have been expected, for the Office was compelled to include in its calculations not only the purchase prices, but also the consumption value, which was not the same for all factories. Nevertheless it assumed a fixed proportion, which it assessed on the basis of the pre-war prices; and the magnitude of its operations is shown by the fact that the turnover amounted to about 325 million guilders during the first fifteen months of its existence.

16. *The Iron and Steel Industry.*

The establishment of blast furnaces in the Netherlands also calls for mention. Although the founding of an organization to include such furnaces, the manufacture of steel, and the operation of rolling mills had long been contemplated, the scheme first assumed definite form in 1917, and in 1925 the works were operating.

The extent of the transit of iron ore through the Netherlands is well known, and this naturally gave rise to the thought of transforming a part of the imports into iron and steel within the country itself. In this connection special attention could be given to such by-products as coal tar, ammonia, benzol, cement, etc.; and the foundation of a considerable chemical industry could be laid on the basis of the coke ovens which were to be established at the Limburg coal mines, thus benefiting mining industry itself by creating an important outlet for coke and coke-coal. The advantage of launching the enterprise on a large scale lay in the opportunity which it would give for adapting to it Netherlands industries of varied characters, so that it would become possible to manufacture not only implements and fittings for building ships and machines, but also, if occasion arose, rails, boiler plates, and the like.

The capital of the Company that was now established was fixed at 25 million guilders, of which the State subscribed 7½ million. Subsequently the Company's share capital was raised to 30,125,000 guilders, of which 2,950,000 guilders were still to be paid. The name of the company is The Royal Blast Furnaces and Steelworks, with its offices at The Hague and its works at Velzen, near the North Sea Canal which connects Amsterdam with the sea.

17. *Netherlands Shipping and Navigation, Particularly in 1914-1916.*

In our survey we have repeatedly referred to the position of shipping during the War, and we may now discuss this branch of activity in detail. First of all, we may give a statistical summary of maritime traffic, taking for the purpose the figures of the entire Kingdom's inward clearings in numbers of ships (both Netherlands and foreign) and their tonnage in accordance with the official calculation of 2.83 cubic meters per ton:

Year	*Number of vessels*	*Tons net*
1912	17,000	17,335,901
1913	16,996	18,197,783
1914	12,454	13,540,051
1915	6,351	6,621,478
1916	5,114	4,681,117
1917	2,184	1,858,951
1918	1,779	1,663,093
1919	7,082	7,097,716
1920	11,114	11,350,436
1921	14,074	16,572,580
1922	15,723	18,809,458

These were classified as follows according to flags, where again the War is seen to have caused many changes:

Year	*Netherlands*	*British*	*French and Belgian*	*German, Austria-Hungarian, etc.*	*Danish*	*Swedish and Norwegian*	*Spanish, Portuguese, and Italian*	*Russian, Finnish, Greek, etc.*	*Japanese, Other Asiatic, Australian*	*North and South American*	*Totals*
1912	4,605	5,083	403	3,635	546	2,019	348	301	4	56	17,000
1913	4,862	5,267	355	3,464	399	1,902	366	341	1	39	16,996
1914	4,320	3,584	227	2,159	200	1,493	227	223	3	18	12,454
1915	3,507	1,240	39	83	27	1,368	12	36	..	39	6,351
1916	3,211	802	85	89	37	849	..	19	..	22	5,114
1917	991	522	100	306	8	253	..	1	..	3	2,184
1918	809	297	129	368	19	147	..	..	2	8	1,779
1919	2,968	1,854	269	928	54	262	12	33	63	639	7,082
1920	3,824	2,480	690	2,254	162	849	167	123	101	464	11,114
1921	4,340	4,338	1,198	2,099	170	970	368	124	86	381	14,074
1922	5,058	5,245	908	2,267	144	1,215	395	148	62	281	15,723

We have grouped several flags so as to facilitate a wide survey. The table proves that during 1917 and 1918 both the foreign and the Netherlands flags greatly diminished, and it also indicates the extent to which the American flags gained ground. It is necessary, however, as in the case of statistics generally, to take a more or less general view, especially as the size of the ships has not been taken into account, so that very small vessels have been put on the same footing as the largest transatlantic liners.

The question as to the origin of the vessels inward cleared is of no less importance. Here, too, a great change is noticeable, and the question is not one of temporary replacement, but of absolute loss,

CLEARANCES INTO THE KINGDOM FROM THE SEA ACCORDING TO COUNTRIES OF ORIGIN

	1912	*1913*	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*
Great Britain and Ireland	6,209	6,265	5,209	3,795	2,751	959	547	3,096	3,983	5,972	7,796
Germany	2,995	3,032	1,948	35	45	132	112	521	1,309	1,369	1,337
France	781	763	567	208	162	16	105	638	1,111	1,471	779
Belgium	667	368	420	1	1	1	19	146	235	284	322
Denmark	140	101	71	32	31	20	35	72	169	179	143
Sweden	675	714	532	592	723	475	423	415	762	427	653
Norway	528	473	394	314	227	106	221	141	728	435	534
Russia, Baltic, White Sea	1,211	1,298	563	4	6	1	23	245	63	476	666
Spain and Portugal	1,324	1,268	780	141	67	18	2	111	286	460	533
Italy, etc.	81	68	62	35	14	1	..	16	90	230	166
Austria-Hungary	18	26	13	..	..	..	..	..	3	..	..
Black Sea and Greece	690	734	494	26	13	..	..	23	88	292	229
Far East, British India, Australia	207	190	151	16	7	2	..	60	104	235	278
Africa, etc.	295	361	237	42	38	9	..	86	116	293	429
Netherlands, East Indies	210	215	186	151	102	21	..	94	152	179	167
North America	502	604	446	528	538	303	250	715	846	741	663
South and Central America	390	431	296	371	242	52	9	243	358	376	388
Coasting trade generally	77	85	85	60	59	47	18	382	685	545	529
Unspecified	..	..	..	..	88	21	15	78	26	110	111
	17,000	16,996	12,454	6,351	5,114	2,184	1,779	7,082	11,114	14,074	15,723

though perhaps only temporary, of many sources of income for the numerous branches of service concerned. This shows very clearly the damage which the Netherlands suffered, for we need only remember the pre-war situation when, in contrast to present conditions, in the port of Rotterdam, for example, two hundred steamers were simultaneously discharging cargo, destined mostly for Germany. The enormous ore-traffic, of which perhaps half the total cargo consisted, came to an absolute standstill, and the cargoes of grain and maize, which practically constituted the other half, likewise soon disappeared. It is true, however, that transmarine traffic increased in some other respects. Thus coal, transported by sea to a much greater extent than before, somewhat augmented the traffic *via* the Netherlands ports, as was also the case with some smaller articles of trade; but the balance of loss remained exceedingly grave.

The countries whence so much less merchandise was brought were mainly those which used to provide for existing demands—ore-exporting ports for that commodity, and the Russian Empire and the Danube ports for grain and kindred products, as well as for timber.

It is almost superfluous to remark that this table likewise records only the number of ships without regard to their size; but we should observe that many vessels entered in ballast, especially during the latter part of the period under consideration. If one were to deduce from the figures that shipping has recovered, the inference would be wrong.

In 1913, before the War, the world-tonnage appeared to be more than adequate for the requirements of sea-borne traffic, and this situation naturally made itself felt in the Netherlands as well as in other countries. When representatives of steamship companies of various nationalities were still peacefully deliberating during the opening months of 1914 as to whether the existing "pool" agreements were to be continued, there was no reason to suppose that a universal upheaval was approaching which was to cause such radical changes in maritime trade. After the outbreak of hostilities some quarters manifested a tendency to lay up ships from considerations of prudence; but this did not last long, for it was soon felt that the Netherlands could not exist without marine commerce, and it was likewise believed that neutrals could do important work. We have already alluded to the difficulties which the neutral flag was destined to encounter. The desire of keeping the German mercantile fleet from operating necessarily led the Allies to prevent its replacement by neutral vessels; and it was estimated that the German and Austrian ships which had become idle amounted in all to some five million tons, partly seized, and partly interned in the first ports that could be reached, including neutral harbors. There was likewise danger from the Central Powers, and this peril became a reality when, even in 1914, a Netherlands ship carrying grain for England fell a victim. During the first few months of 1915, several other vessels met the same fate, and by the end of 1915 the total loss amounted to eighteen vessels, of a total of 37,000 tons.

When, moreover, England and France put an embargo on a large part of their mercantile fleet for purposes of transport, freight rates necessarily rose considerably because of lack of cargo space; and early in 1915 they were already four, five, or six times the amounts prevailing in 1914. We have pointed out that this increase was accompanied by an enormous advance in the price of bunker coal; and it was also necessary to take into account greatly enhanced premiums for insurance against molestation, higher wages, and long delays in ports still open to traffic. Nevertheless freights yielded a good profit, and it is not surprising that the selling price of ships was influenced by this fact.

Shipbuilding was very active in the Netherlands as elsewhere both during this period and long afterwards. The Report of the Rotterdam Chamber of Commerce, from which much has been borrowed for what is said under this heading, showed that the Netherlands shipbuilders were so overwhelmed with work that orders could not be filled within the comparatively short terms desired by the contracting companies, the result being that the time of delivery for the large majority of the ships then ordered had to be extended far into 1916. During 1914, according to Lloyd's Register, 130 ships were launched in Netherlands shipbuilding yards, with a total tonnage of 118,153 as contrasted with ninety-five ships, of 104,296 tons, in 1913. The increase of Netherlands mercantile fleet; *i.e.*, the difference between vessels newly built, purchased, etc., and sold, lost, etc., is estimated at twenty-seven ships amounting to 149,004 tons gross in all. For the sake of completeness we may note that the majority of the ships was built for Netherlands account, though foreign customers were not lacking. For years the Netherlands had been the country for producing river-barges and special ships under foreign flags; but hitherto few contracts had been made for ocean steamers, though there had been an increase during the few years previous.

We may also allude to the enormous increase in passenger traffic during the weeks following the outbreak of the War. The hosts of stranded passengers who wished to return home not only made heavy demands on the capacity of the railways, but for a short time also forced the management of the Holland-America Line in particular to extend their accommodations. A very large number of Americans used to spend their summer holidays in Europe before the War and all of them wished to go home as speedily as possible; but while the means of transportation on other continental steamship lines were greatly restricted, this situation was too brief to influence business permanently, except perhaps as an advertisement for the Holland-America Line, an advantage not to be underrated. Other Netherlands lines also shared in these advantages, though not to the same degree, since circumstances were not identical. The advantages outlined above were, however, counterbalanced by the fact that ordinary third-class traffic greatly declined since the belligerent countries restricted emigration.

We now propose to review the year 1915 in its relation to Netherlands shipping interests in so far as we have not yet discussed them.

The great rise in freight rates continued in 1915 for the same reasons as those which had operated in 1914 and which made themselves still more strongly felt in 1915. The German and Austrian mercantile fleets were altogether eliminated, and the best vessels of the British merchant marine had been commandeered to serve either as auxiliary cruisers or as transports. The percentage of the remaining ships which were navigable, moreover, was influenced by changes in traffic. Now that the Baltic and the Dardanelles were closed, the requirements of breadstuffs had to be covered mainly from the River Plate, Canada, and the United States of America, and the small ships which normally navigated the Baltic and the Black Seas could not be employed for that purpose. At the same time we should not overlook the fact that mines and German submarines wrecked a great many vessels. With regard to the East Indies, traffic was greatly impeded in consequence of the reduced use of the Suez Canal, the route round the Cape now having taken its place.

The higher freight rates were counteracted by such heavier charges as increased wages, higher costs of provisions and coal, and especially the insurance premiums against molestation. Nevertheless in 1915 the Netherlands companies did an enormous business which was not fully expressed in dividends paid, for such large profits naturally allowed a generous increase of reserves. Obviously steamers rose in value under these circumstances, and the Bourses dealt in shipping shares at greatly enhanced values.

We cannot here review the fluctuations in the value of those shares, but we may note that during 1915 thirty-four ships, with a total tonnage of about 80,000, were sold abroad for at least twenty million guilders, and these were, for the most part, old vessels. On the other hand, eleven steamers, amounting in all to more than 30,000 tons gross, were sunk, and five, of 11,032 tons gross, were lost by accident at sea, while two, with a combined tonnage of 2,850, were seized. Against these losses the Netherlands mercantile fleet increased in 1915 by forty-one ships, with a total of 121,638 tons gross.

We may here note once more the very great extension of the shipbuilding industry in the Netherlands. Many yards which formerly constructed only Rhine barges and vessels for river navigation were now enlarged and equipped for building ocean-going steamers. This development is attested by the fact that whereas by the end of 1915 the number of ships on the ways in the Netherlands was 187, measuring 390,784 tons in all, many ships built there being constructed for foreign owners; Netherlands companies, on the other hand, placed orders abroad.

If an outside observer were to consider only the results of 1915 and 1916, he would suppose that that period left nothing but pleasant recollections; but a closer study of the circumstances which led to such apparent success divulges the fact that much anxiety had to be endured, and that these two years—especially 1916—were among the most difficult of all. The curtailment of liberty was much accentuated in 1916 in consequence of the measures taken by the Netherlands Government. These, we must add, were extremely necessary, for considerations of public interest, with a view to supplying the prime necessities of life, forced the State to dictate routes and freight rates, quite apart from the steps taken to safeguard the retention of the merchant marine. During 1916, the same conditions prevailed as in 1915: lack of space, high freights, and heavy losses. It was, moreover, difficult to obtain sufficient quantities of bunker coal in England unless the shipowners were prepared to carry goods for that country, a demand which frequently brought companies into conflict with their own government.

The splendid financial results were, furthermore, whittled down by the excess war profits tax, which was particularly difficult of application in the case of the shipping trade. The loss of a properly insured vessel naturally afforded a considerable cash gain; but a shipping company which did not desire to pay this profit to its shareholders because fresh space must be provided entered only a part as profit and reserved a considerable amount to be written off against the new boat which must now be built. The Treasury could not immediately agree to the consequences of such a withholding of money which greatly reduced the sum that could be claimed on account of excess war profits tax; and the fiscal authorities also wished to have their say as to the amounts so to be withheld.

18. *Taxation and Its Results.*

Perhaps we may here again revert to the greatly accelerated development of new ideas on many subjects. Since the State was obliged to obtain revenues more or less proportionate to the enormous rise in expenditure which was imposed by the War even on countries which remained neutral, it was necessary not only to increase greatly the existing taxes and to levy new ones, but also to exercise a much closer control over declarations, one of the main motives here being to protect from less honest taxpayers those who had always submitted correct statements. This control likewise entailed a searching investigation of books and papers, and it was necessarily applied to all, even to those who had never been guilty of fraud. Although the latter category were certainly much more numerous than was sometimes supposed, it transpired that there were many citizens whose honesty in regard to taxation had not been developed to the same perfection as their other highly meritorious qualities. The natural consequence was that the officials at first took the view that honesty as well as dishonesty must be proved. When we remember the heavy punishments meted out to those who sent in false declarations, we may conclude that the attitude toward taxation has undergone a profound change, and that the people have learned that the State also possesses certain rights, so that the community must permit itself to be subjected to a control which formerly would have been resented as a violation of personal freedom.

The War hastened the adaptation of the people to the unavoidable change in circumstances; and at the same time a sort of mutual understanding, founded on mutual confidence, has been reached between the Treasury and the taxpayer. When once the officials are convinced that evasion of taxation is not intended, and the taxpayers are persuaded that the only aim is a proper application of the rules and regulations fixed by law, control will do no harm and will be effected with greater rapidity than before. An amicable agreement has settled the difference of opinion which prevailed at first with regard to fixing profits made on the total loss of a ship insured at full value, and, therefore, in many cases far above its real worth.

19. *Netherlands Shipping and Navigation in 1917.*

Returning to the condition of the shipping trade in 1916, we ought again to mention that, during the first seventeen months of the War—*i.e.*, up to December 31, 1915,—out of a total loss of 1,889,877 tons gross of the mercantile fleet of the world by the action of mines and submarines, the Netherlands merchant marine suffered to the extent of 36,843 tons, and that during 1916 the Netherlands was obliged to record a further diminution of 80,481 tons from these same causes. During that year ten ships, with a total tonnage of 33,088, were sold, and six ships, of 4,921 tons in all, were seized. Over against this there was an increase of forty-five ships, amounting altogether to 124,125 tons, which were put in service, so that during 1916 the Netherlands cargo space showed no decrease.

In 1917 the United States entered the War. If it be asked, writes the Chamber of Commerce of Rotterdam in its review of the year 1917, whether this event or Germany's proclamation of unrestricted submarine warfare was of greater import to the Netherlands, it appears scarcely possible not to answer that America's abandonment of neutrality gave rise to the graver anxiety for the shipping trade and the supplies of foodstuffs. In consequence of the measures taken by the United States the connection between the Netherlands and her Eastern dependencies was almost entirely severed for the time being, and the detention of Netherlands vessels caused more and more misgivings with regard to the supply of the prime necessities of life.

This by no means diminished the consequences of unrestricted submarine warfare, not only on account of the direct danger to neutral ships, but also because of the British and American counteraction which followed. Great Britain declared that not a single boat could be cleared thence for the Netherlands unless a vessel belonging to the same owners had arrived in a British port, and in many cases the supplies of coal had to be taken there. The United States insisted that part of the Netherlands vessels should be employed in American waters in exchange for a supply of bunker coal to Netherlands ships and of products and raw materials for food and industry. The damage was less serious for the companies than for the State, which was obliged to refund them lay days and in many cases to have its own cargoes of grain, which had been purchased and paid for, discharged so as to prevent them from deteriorating. It is calculated that in 1917 eighty-seven ships, measuring 359,082 tons in all, were withdrawn from the Netherlands carrying-trade for more than six months. All things considered, this is, perhaps, an underestimate, though we should not lose sight of the fact that it included vessels which were not directly destined for the Netherlands. We have already pointed out that the necessity for transporting East Indian products had caused the establishment of direct lines from the East Indies to America, and the vessels seized included some which had been put in service for that purpose.

There was only a slight increase in the value of ships in 1917, the obvious explanation of this fact being that owners were deprived more and more of unrestricted control of their tonnage in consequence of the government measures mentioned above; but since the same phenomena were observed in other countries as well, we need not enlarge further on the matter here.

In 1917 the Netherlands losses from submarine attacks and mines were again heavy, since these destroyed thirty-one ships, with a total tonnage of 81,867, while two boats, totaling 2,775 tons, were seized and confiscated, and several vessels were withdrawn from her fleet as being, for the greater part, British property. In contrast with these losses, a large number of steamers were put in service, or at least launched, during 1917. Thus we find an increase of eighty-eight ships, measuring altogether 180,762 tons, over against fifty-two, with a total of 136,972 tons lost to the service of the Netherlands. These figures show that shipowners had not allowed themselves to be discouraged, and this is further proved by the fact that the number of ships under construction at that time was estimated at seventy-eight.

We may here refer also to the extraordinary expansion of shipbuilding in the United States. On July 1, 1916, that country was building or had contracted for no less than 385 steel-built steamers, with a total tonnage of 1,225,784, of which 193 were ocean-going ships of over 1,000 tons, amounting in all to 1,037,103 tons. This figure increased greatly in the course of the year, and it was hoped that 326 vessels, with a total measurement of 998,035 tons, could be launched before June 30, 1917. When we remember that the years following witnessed the greatest expansion of shipbuilding in America, we can explain the serious crisis which arose in the shipping trade after the War.

According to the Netherlands Government *Gazette*, the merchant marine of the Netherlands, including steamers and sailing ships, consisted, on December 31, 1916, of 786 vessels, and of 800 on the same date in 1917, the total net tonnage being given as 2,152,681.49 and 2,126,718.81 respectively. The ratio of these figures perhaps indicates the tendency of that period to build more ships of small tonnage; and though this may have been merely a matter of chance, it was understood that smaller vessels were desirable since there was less danger that they would be commandeered. This, however, seems to be an unimportant matter.

20. *Anglo-American Right of Angary and German Prize Ordinance.*

The year 1918 brought new difficulties in addition to those already existing; and here we may borrow a few remarks from the Report of the Rotterdam Chamber of Commerce.

March of that year saw an abrupt end of the protracted negotiations of the Government of the Netherlands regarding the cession of part of the Netherlands tonnage to the Entente. With an appeal to the "Right of Angary" the ships lying in the ports of the United States, the United Kingdom, and the British Colonies were simply seized. To many persons this Right of Angary was quite unknown, for it had been a very long time since sovereign Powers had made use of it in order to meet their needs of transportation, even though only in return for proper indemnification. This right had been regarded as obsolete, but it was found to be still included in international maritime law; and though its application naturally caused much commotion, acquiescence was inevitable. From a financial point of view the measure was not particularly harmful, because the use of the ships was properly paid for, and in many cases the vessels had been doomed to inactivity in foreign ports. A little later the monthly indemnity was fixed at 35 shillings per ton, and at the same time it was arranged that in case of total loss a similar ship would be supplied, or in lieu of this £75 per ton gross would be paid for a ship not over ten years old, £60 for one between ten and thirty years old, and £52 for the oldest vessels. Facilities were, moreover, granted for the repatriation of the crews if they desired it, and simultaneously the American Government placed 100,000 tons of grain (1 ton = 1,000 kilos) at the disposal of the Government of the Netherlands, for which Netherlands boats could call in return for payment, these vessels being exempt from all hindrances.

The measure described above elicited a counter-measure from the German Government, who inserted in their *Prisenordnung* a regulation under which every neutral ship was considered as put in service by a belligerent State if the State whose flag it flew had made an arrangement with an enemy State for the cession of shipping space or—and this was the main point—if by far the larger part of the mercantile fleet of the neutral State in question was employed by the enemy. The most serious aspect of the case was that those ships which had been laid up in Netherlands waters, and which, therefore, were idle, were not included in calculating whether the great majority was used in enemy service. As a consequence of this, the Government of the Netherlands forbade ships to sail, so that the only vessels in use were those in Government employ, except, of course, boats running between the East Indies and America.

21. *Situation at the Armistice.*

The armistice of November, 1918, seemed at first to afford some alleviation, but it soon became evident that other circumstances had arisen which impeded the reëstablishment of ample and unhindered traffic. The four years of war waged in a manner hitherto unknown in modern history proved to have caused in many countries an economic dislocation which amounted to a radical change in previous conditions. This was bound to lead to an entirely new state of affairs which placed obstacles in the way of a recovery of regular commerce and which not only entailed danger of revolution, but even showed symptoms of it here and there. Moreover, impoverishment was general, and the feelings of enmity had by no means subsided after the armistice. The situation remained disorganized, and much care was necessary if revival were not to remain an illusion. This, however, leads us away from the special branch of shipping to the general sphere of the development of commerce.

22. Losses and Gains of the Netherlands Mercantile Marine, 1914-1920.

In this connection we should first give the total figures concerning the Netherlands mercantile marine, as recorded in the Government *Gazette*, at the end of each of the four years of war. The tonnage is here stated in tons net, whereas we have previously dealt with tons gross, but conversion is unnecessary, since we adduce the figures merely for the sake of comparison. As is well known, gross and net tonnage represent volumes which are generally referred to as "register tons" of 100 cubic feet, equal to 2.83 cubic meters. Gross tonnage includes almost all enclosed space, in so far as this occurs above the double bottoms; net tonnage is calculated from gross tonnage by deducting everything reserved for the crew, purposes of navigation, water-ballast, and engines and boilers; and the balance will approximately indicate the space available for cargo and passengers, this being termed net tonnage. The proportion between gross and net tonnage varies a great deal in different vessels, since it depends upon technical details, especially upon the weight and size of the engines, and the space reserved for boilers, as well as upon the size of the superstructure, and also upon the type of the ship. The Netherlands mercantile fleet, then, including steamers, sailing ships, tugs, and motorboats, was constituted as follows:

1915 787 vessels with a total net tonnage of 770,147
1916 786 vessels with a total net tonnage of 760,664
1917 799 vessels with a total net tonnage of 753,680
1918 907 vessels with a total net tonnage of 801,176

This table will illustrate fairly well what we have discussed above: the losses suffered were more than made good by building and purchasing new ships, and this becomes still more evident when we remember that at least 200,000 tons were under construction, this figure having even risen to 500,000 by the end of 1919. The excellent financial results of shipping induced not only long-established companies, but also a large number of new firms, to make large additions to their fleets; and of course the latter were the first to go under when the halcyon years became a thing of the past.

The year 1919, in fact, was a turning point in this respect. Results in themselves were still satisfactory, but confidence in the permanency of the situation had been shaken; and after the conclusion of the Peace of Versailles commercial and shipping circles felt that the period of transition to more normal times had come. The year 1920, however, was destined to prove conclusively that this phase was to be accompanied by serious convulsions, for it then became obvious that in time of prosperity there had been a failure to realize sufficiently that that period was not permanent. As the prices of commodities had risen excessively, shipping space likewise had been increased too largely, at least for the first few years after the peace.

23. *The United Netherlands Navigation Company, Ltd.*

The year 1920 witnessed the establishment of the N. V., *Vereenigde Nederlandsche Scheepvaartmaatschappy* (United Netherlands Navigation Company, Limited) with a fully subscribed capital of 100 million guilders. Eight large Netherlands steamship companies participated in this organization, and they also represented some smaller subscribers. The special aim of the Company was to reach a proper mutual agreement by which the sphere of each company would be respected and new services would be established for joint account. The War had caused great changes; some foreign companies had ceased operations altogether, and there was a chance of attracting the traffic to the Netherlands, while it was likewise important to reach a national understanding. The following lines were at once put in operation: Holland-Far East, Holland-British India, Holland-Africa, and Holland-Australia, with a possibility of opening other routes. Each new line was to be worked, by common consent, by one of the component firms; and the Company could take over ships from existing corporations if conditions could be agreed upon.

The initial operations chanced to coincide with the period of depression against which shipping also was compelled to contend, so that satisfactory financial results have by no means been obtained.

Nevertheless, the establishment of the Company certainly means added strength to the Netherlands economic situation, for when means of transportation are provided, commercial relations often revive, followed by many beneficial results, especially for industrial activity at home. One might almost feel inclined to regard regular lines of steamers as the foremost necessity. Just as ships at once follow dredges in favorably situated ports and are a sequence to the building of quays and docks for discharging cargo, so commerce and traffic develop shortly after transport and sale have become possible. It is, further, noteworthy that the services were not to be restricted merely to traffic from and to the Netherlands, but that other European ports were also to be included in the routes.

Equipped with a fleet of eighteen large, modern, cargo boats, the United Netherlands Navigation Company occupies an important position, and it is quite possible that it will succeed and prosper, although there will be permanent foreign competition as well as domestic rivalry from owners who have not joined the combine. In this connection we may already point to a newly established line to South Africa and to the well-known Royal Dutch Lloyd which serves traffic with South America independently, though an arrangement with these two companies is not impossible.

24. *Shipping Dividends and Freight Rates.*

At this point we may give a table of the dividends paid from 1912 to 1922 by the Holland-America Line (the largest transatlantic line

	Holland-America Line per cent	*Royal Netherlands Steamship Company per cent*	*"Nederland" per cent*	*Rotterdam Lloyd per cent*
1912	15	8	10	17
1913	15	8	10	10
1914	17	6	7.5	7.5
1915	50	15	10	10
1916	55	20	15	15
1917	25	10	20	15
1918	40	15	30	25
1919	50	20	30	20
1920	25	10	20	15
1921	10	..	11	10
1922	..	..	9	7

of the Netherlands), the Royal Netherlands Steamship Company, which operates a large number of routes in and outside Europe, and the two great companies which maintain regular services to the Netherlands East Indies; viz., the *Stoomvaart Maatschappy Nederland* and the Rotterdam Lloyd.

We may here endeavor to construct a table showing the course of general freight rates for the entire period from 1914 to 1922. The synopsis, however, can only be summary since fluctuations were sometimes very considerable during any one year, and traffic was by no means regular, particularly in the case of tramp-steamers in the general carrying-trade, to which allusion has already been made.

From the large list of commodities which found their way to the ports of the Netherlands we have taken a few, converting the freight rates into guilders to facilitate comparison, and restricting the calculation to those from North America and from the Netherlands East Indies. The following figures may be noted:

	1914	*1914-15*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*
(in guilders)									
Grain from New York.									
Per 480 lbs.	1.05	3.60	9.	7.	7.	..	4.80	2.50	1.90
Flour from New York.									
Per 100 lbs.	.37	1.60	1.90	1.90	..	1.75	1.20	.56	.52
Linseed Cakes from New York.									
Per 100 lbs.	.40	1.10	1.37	1.70	..	3.12	1.60	.55	.55
Provisions from New York.									
Per 100 lbs.	.55	3.12	5.	..	..	2.80	1.62	1.02	.62
Oil from New York.									
Per 100 lbs.	.52	2.57	5.65	6.88	..	3.12	1.80	.75	.65
Copper from New York.									
Per 100 lbs.	.31	2.50	..	..	..	1.12	.90	.40	.40
Tobacco from Baltimore.									
Per 100 lbs.	.87	2.20	8.12	5.	..	7.17	2.67	1.12	1.12
Tobacco from the Netherlands East Indies.									
Per 800 kilos	57.	60.	145.	308.	..	135.	125.	60.	55.
Coffee from the Netherlands East Indies.									
Per 1800 kilos	55.	95.	180.	272.	..	206.	102.	102.	90.

25. *Competition through Depreciation of Foreign Exchange.*

During the closing years here under review, shipping, like commerce and industry, suffered from the fall in the rates of exchange in the surrounding countries. Before the War, no one would have dared to predict that these depreciations would to any very great extent exercise an adverse influence on the trade of such States as had not been fated to suffer directly from the conflict. It was expected that, generally speaking, prices and wages would rise in the same ratio as rates of exchange fell. It was thought that competition would be keenest from those countries whose inhabitants had learned, during the struggle, to forego various kinds of luxuries so that after the termination of hostilities they would be satisfied with less, and that, consequently, more work would have to be done for lower wages. It might be supposed that a nation would revive economically after the War; but no one considered the possibility of competition by means of depreciated rates of exchange. In this respect, too, we have been living very quickly and have learned to comprehend a thing which appeared absurd. Obviously a quick fall in foreign exchange could not at once coincide with proportionate increases of prices and wages, but experience was destined to prove that such a situation could last. Repeated collapses in the rates of exchange cause prices and wages to fall constantly behind, and, as often happens in business, the prices at which sales are effected on change remain for a considerable period below those of the countries of production. Buyers, having once covered their requirements, prefer to clear their stocks rather than to agree to the higher sums demanded, and importers are surprised to find that these stocks can be drawn upon for so long a time. At last, of course, prices will have to come into line with those ruling in the world-market, but this is often a slow development. Ultimately the lead gained by the depreciation of the rates of exchange will be lost, but the process has been found to be a lengthy one, and much staying power is demanded.

26. *The Condition of Commerce as Illustrated by Certain Imports.*

In our survey thus far we have placed shipping in the foreground, especially for the period under consideration, and have done so apparently to the detriment of commerce. We might have constructed a table showing the statistics of imports and deliveries of various commodities during the years under review, but we preferred to set before the reader no more figures than were necessary within the frame of our argument, particularly as such statistics would scarcely consist of much more than what might equally well be deducted from the data referring to traffic. When maritime commerce is restricted, trade in goods is naturally limited as well; and a revival of the former likewise indicates an increase of the turnover.

We may, however, make one exception with regard to the arrivals of the chief varieties of grain in the port of Rotterdam. In former times, this port was especially prominent as a port of transit, and in this case the closing of the hinterland is very significant.

The arrivals, expressed in tons of 1,000 kilos, amounted to:

	Rye	*Wheat*	*Barley*	*Maize*	*Oats*
1913	554,278	2,018,258	817,335	742,553	512,053
1914	300,011	1,353,650	441,548	424,947	284,865
1915	47,845	1,105,904	74,170	880,626	33,164
1916	26,132	1,553,363	132,629	540,949	57,789
1917	15,042	758,642	31,688	146,339	9,081
1918	5,174	461,145	29,834	99,000	......
1919	72,672	467,284	134,667	231,741	167,414
1920	233,545	762,522	119,505	525,261	26,872
1921	145,177	1,456,676	241,987	1,002,205	74,285
1922	385,008	1,136,339	163,006	955,561	113,541

This table confirms the statistics previously cited regarding the inward clearings for the whole Kingdom, and again shows that 1918 was the most unfavorable year; but from that time onward, a fairly regular increase may be noted.

The figures as to the imports of cotton may likewise be given here, especially since an effort was made during the War once more to attract this commodity, formerly so vital to the ports of the Netherlands, by establishing warehouses adapted to modern requirements. It was expected that when they had been erected, trade would develop, supported by the spinning mills in the Netherlands and abroad. For these records, we cannot go further back than 1917; and, in view of what we have already said, they also appear to be more or less redundant. Here again 1918 was very unfavorable.

ARRIVALS IN THE NETHERLANDS OF COTTON AND LINT TOGETHER

(*in kilos*)

1917	10,849,117
1918	189,244
1919	36,375,192
1920	37,342,983
1921	37,944,000
1922	41,239,000

27. *Reorganization of Netherlands Chambers of Commerce and Factories.*

We may now draw the reader's attention to a change which came about during the period of the War, not in commerce itself, but in the institution founded to represent the general interests of commerce, navigation, and industry; *i.e.*, the reorganization of the Chambers of Commerce and Factories, which had existed under this name ever since the era of Napoleon. This reorganization was connected with the establishment of a general commercial register. The Chambers of Commerce and Factories, which were incorporated by charter, were bound, under the commercial registration law, to keep a register in which every firm or other company was entered, together with the names and nationality of the partners or owners, a rough statement as to the operating capital, and the main provisions of partnership, in so far as these are of importance to third parties.

The inclusion of the nationality of the managers was not the main consideration, but it should be mentioned because during the War this question became somewhat prominent in the Netherlands as well as elsewhere. The motives were not those which obtained in the belligerent States, where the exclusion of foreigners and of those to be considered such was a matter of moment; in the Netherlands it was merely the necessity of meeting the desire for data from abroad, and the Commercial Register will easily afford such information in future. The liberal convictions which have long prevailed in the Netherlands are not altered; and despite some occurrences which might seem to prove the contrary, it is generally felt that to prevent foreigners from working in the Netherlands under the same conditions as the Hollanders themselves could only harm the latter. When the foreigner possesses equal rights, on condition that equal duties are imposed, his activities will not be detrimental; at most he will afford a stimulus to the native, and if he does so, this proves that a tonic was needed. This is mentioned only so as to prevent wrong conclusions, an error which it is highly important to avoid.

Summarizing the changes resulting from the reorganization of the Chambers, we may mention that their number is limited, but that in their totality they embrace the entire Kingdom, and that each includes the wholesale as well as the retail trade. The listing of merchants and companies in the Commercial Register enables all those who are interested in a proper representation to join in the election of representatives; while the levying of assessments and annual contributions affords the Chambers the means requisite to support institutions which, after defraying administrative expenses, may be supposed to be useful to commerce and navigation.

Hitherto the Chambers had been merely advisory bodies, but now they can act independently. Special mention should be made of the fact that their advisory capacity has been by no means restricted. Any such diminution would have been deplorable, for during the long period of their existence they have been very active and effective in this regard. This could not have been otherwise, for those whose task it is to execute the law cannot hope for a more dispassionate judgment than that of bodies constantly in touch with those circles on whose behalf regulations are carried out or proposed, and who at the same time are not engrossed in the objections always inseparable from such measures. It is to be hoped that after the reorganization, as before it, the Chambers will regard that task as of paramount importance.

28. *The War's Net Effect on Netherlands Commerce and Navigation.*

The year 1920 brought reaction. The collapse in the prices of commodities which had started in Japan and had passed to America, soon reached Europe as well, being accompanied (or, in fact, caused by) a superabundant supply as contrasted with the existing demand, a condition which was all the more deplorable because the collapse coincided with the general scarcity produced by the previous tide of prosperity. The period of war was full of anxiety in almost every respect, though it was advantageous from a financial point of view. These prosperous times had given rise to a general and very considerable increase of wages, shorter working hours, and a number of social improvements which may have been very useful in themselves, but which were very costly, and which increased still more a State expenditure already greatly expanded by the War. High taxation was the unavoidable consequence of this; and the collecting of many taxes on a new basis not only required a large staff for the prevention of fraud, but also much time, thus causing assessments frequently to be levied when the large profits had already been forgotten, and sometimes had even been converted into losses. Added to this was a very peculiar phenomenon, though obviously quite human. The War had lasted so long that the oft-repeated warnings of an inevitable reaction after the period of revival had been forgotten. People had become used to a situation which all knew could not be permanent, but which had been of such duration that they took no heed of the future.

Under such circumstances, dislocated society had to resume its former equipoise, and this could hardly be done without serious shocks. With regard to the Netherlands, however, we may state one fact with certainty, and that is that the War has not discouraged her, but that, on the contrary, it gave her a preparation which will bear good fruit as soon as commerce and navigation will have fully liberated themselves from the difficulties which they encounter from all sides,—in a word, as soon as an equilibrium shall have been restored, not only between the States themselves, but also between supply and demand of goods, of freights, and of wages.

III

THE HOUSING PROBLEM

BY H. J. ROMEYN

III

THE HOUSING PROBLEM

INTRODUCTION

The history of the development of housing in the Netherlands from 1914 to 1922 may be divided roughly into two periods, the one before, and the other after, the armistice. Though the line of demarcation cannot be drawn so sharply as to apply to every aspect of the problem, yet the effect of the armistice and of its consequences upon the housing problem and upon its solution both at home and abroad was so profound that both the beginning and the end of the War put their stamp upon question and answer alike.

Each of these two periods was followed by a temporary depression in building. At the outbreak of the conflict, this condition was caused both by actual obstacles and by uncertainty regarding the future; the armistice was expected to cause a considerable fall in prices which would speedily bring a return to normal. Not only was this anticipation unfulfilled, but the events following the signing of the armistice accentuated more sharply the scarcity of housing which had gradually become increasingly evident during the years of war.

In the chapters which follow, we hope to explain this clearly. A survey of the problem at the beginning of the conflict is followed by a detailed account of the development of building in both periods with the aid of the State, first as fostered by the authorities under the provisions of the Housing Act, and later as furthered by private initiative, the other aspects of the question being grouped around this framework.

1. THE PROBLEM BEFORE THE WAR

1. *The Existing Legislation.*

Even before the War, the Netherlands had a housing problem, though it was far different from that which prevailed after August, 1914. The necessity of taking steps to improve conditions was already recognized; but, generally speaking, there was no evidence of systematized provision for such a need. As early as 1901, the realization of the great importance of good housing morally, hygienically, and economically had revealed the desirability of State intervention in the improvement of conditions and had led to the passage of the Housing Act (*Staatsblad* No. 158, June 22, 1901). The legislative point of view in this measure was that the Government could not provide every person with a suitable dwelling, but that it could coöperate in various ways to improve the situation.

The principal reasons for the evil state of affairs in this respect were as follows: the constant possibility of renting houses which were badly arranged and unsanitary; the disinclination to make necessary repairs to houses which threatened to become uninhabitable; the building of flimsy dwellings which did not meet the most elementary requirements and which, before many years, would inevitably increase the number of hovels; the inadequate construction of good houses; and the lack of financial means, which compelled many to make shift with wretched dwellings.

The steps taken to make improvement possible may be divided into three categories. The first of these comprises measures intended to prevent new abuses from developing in the future, ruling upon the obligation incumbent on municipal authorities to pass ordinances for buildings and dwellings and to make plans for extensions. The second gave authority to remedy existing abuses, empowering municipal authorities to issue orders for improving existing dwellings or to declare them unfit for human habitation. The third category was designed to promote the construction of houses, regulating the financial assistance which could be given for this purpose by the commune or by the State.

For our present purpose the last category is the most important. In principle, the Act distinguishes two possibilities. The State may make loans for the acquisition of land or for the purchase, erection, or improvement of dwellings in the interests of housing by the commune itself; or it may enable the communes in their turn to make loans for such purposes to associations, societies, and foundations working exclusively for the improvement of the housing condition of the people. These government loans are granted on condition that interest and principal are paid off in equal annual amounts, the maximum period for such repayment then being set at fifty years. If the money is employed for any other purpose than that for which it is granted, either the loan itself or that part of it which is still unpaid may be demanded immediately. At that time, the normal rate of interest was made the same as that at which the State itself might borrow; and from 1905 to 1914 it varied between 3¼ and 4 per cent. The Act furthermore renders it possible for the Government and the communes to grant subsidies toward meeting the annual payments.

In order to enjoy the favorable stipulations of the Act, the associations, etc., already mentioned must be "authorized" by Royal Decree, and their statutes must conform to the regulations of the Royal Ordinance concerning this matter. Neither the Act nor the Royal Ordinance contained any limitations as to the extent of the assistance which might be given; but in practice aid was, and is, given, except in some special cases, exclusively for housing the working classes. There is likewise entire liberty as regards the participation of private capital; but a commune receiving a loan from the Government may lay on authorized bodies certain obligations as to its use. As a matter of fact, the loans at first were usually between 90 and 100 per cent of the total amount required.

In this connection, we may mention a very important supplement to the Expropriation Law of August 28, 1851 (*Staatsblad* No. 125 of 1851), in the Housing Act, which contains a special chapter authorizing expropriation in the interests of providing housing for the people. Although, as a rule, expropriation can be effected only after filing a claim that it is demanded by the public interest, it may be dispensed with in certain cases prescribed by the Act. Such expropriation is made in the name of a commune or of an authorized body in virtue of a resolution passed by the municipal council and heard and approved by the Crown on the advice of the Council of State. Not only were formalities greatly simplified in this manner, but cheap housing was also furthered in high degree by explicit regulations as to the method of valuing properties to be expropriated, with a view to excluding the possibilities of speculation. The cases in which expropriation is permissible are not restricted to the abolition of bad conditions, but also include plans to make land available for carrying out a scheme for building or extension.

2. *The Nature of Housing-Act Construction and Its Influence on Private Building Activity.*

The authors of the financial paragraphs of the Housing Act thought that they would be used chiefly in large cities to meet the needs of those who had lost their homes in consequence of measures taken by public authority; but the actual course of events proved to be far otherwise. It is true that houses were constructed here and there to replace buildings condemned as uninhabitable; but at first, the principal building activity was in the country districts, where private initiative had failed to satisfy requirements. The reason for this condition was, for the most part, lack of active building enterprise, though it also seemed impossible to build workmen's dwellings profitably, in view of the local rates of rental. Cases were even known in which no adequate returns could be obtained from erecting the very simplest houses, notwithstanding the fact that money could be obtained from the State at lower rates than could be given to private builders. If, despite all this, building was determined upon, it was necessary to go a step further and to grant subsidies likewise for the construction of new houses designed for others than the very poor who had been removed from condemned hovels. This actually was done, though under strict guarantee that rents would be raised systematically so that the subsidies would be terminated within a short time. It can hardly be denied that this concession, even if extorted by necessity, set a dangerous precedent. The granting of such subsidies, however, was exceptional, for the houses built with government aid were usually self-supporting, the reason doubtless being that no rigid demands were made regarding the dwellings to be constructed beyond compliance with local building regulations and all possible improvement in type as compared with existing houses for the same class of workmen. A further check on granting subsidies was afforded by the general requirement that the commune concerned must bear half the expense.

Though the Government constantly sought to give supplementary assistance in promoting building, it had not the least intention of supplanting private enterprise; and it accordingly took the position that dwellings erected with its aid should not be rented below the normal price obtainable in the open market for the same type of houses. Nevertheless, private builders complained of unfair competition since communes and authorized associations could obtain cheap State money. Though the counter-argument might be advanced that the private builder is less exacting technically regarding his output and is also in a position to build most economically, the fact remains that, generally speaking, private building of workmen's dwellings had already stopped at the outbreak of the War.

This phenomenon is explained in various ways. A partial cause may be found in the difficulties still generally felt by the building trade in consequence of a recent crisis in credit for real property, while the introduction of the Housing Act had doubtless had a tendency to render the ownership of workmen's houses less attractive. Private building enterprise, however, does not operate to exploit its own output, but to sell it at a profit as soon as possible. The Act not only increased the requirements of the building regulations, but was also more stringent in the stipulations to which existing dwellings must conform. Many owners, therefore, found themselves either threatened with loss of property through condemnation or confronted with the necessity of heavy outlay in consequence of municipal orders for improvement. If this diminished the attractiveness of ownership of workmen's dwellings as an investment, on the other hand the more exacting requirements lessened the margin between the cost of constructing such houses and of building small dwellings for the middle classes in the cities, so that construction for the latter category was stimulated. A further spur, therefore, was needed to urge the private building trade to renewed activity, and this was to be found in increased profits from the rise in rents. If this failed, or if it was insufficient to make private building profitable as a result of erecting workmen's dwellings in some communes with government aid, it could be said with some justice that there the Housing Act had crushed private initiative. It is difficult to say how far this actually took place, or to what degree such initiative was adversely affected by the possibility of building with government aid, manifested by the formation of societies authorized to act for the improvement of cheap housing. Whether one hoped or feared that, in the long run, private ownership of workmen's dwellings would be replaced by exploitation for the common weal, it was necessary to reckon with the fact that individual building activity had failed.

Although in general, as already noted, government money was loaned only for constructing workmen's houses, assistance was given a few times in the years preceding for building dwellings of another type, notably for an association of teachers, for one of non-commissioned officers, and in a single case, intended to give an example of improved communal extension, for those in easier circumstances. Subsequently, the Government became less generous, and limited itself to constructing workmen's houses in the strict sense of the words. Experience showed, however, that this term was not sufficiently accurate to permit an exact line of demarcation to be drawn. This difficulty led the Government, early in 1914, to rule that subsidies from the Royal Treasury could be granted for building houses which, from their rate of rent, might be regarded as intended for workmen earning average wages, or for those whose income would assimilate them to such workmen, or for those of inferior means.

To avoid impeding private initiative, it was likewise agreed that, although houses might be built with private capital within the limits thus drawn in the communes concerned, in each particular case there might be a special investigation to determine whether there was reason for contracting a loan from the State Treasury, as when, for example, the type built by private contractors called for improvement, or when houses were to be erected directly for tenants of dwellings that had been condemned.

3. *Building Statistics of 1905-1914.*

The following statistics will give some idea of the extent of house-building with State aid before the War.[1] The years immediately following the introduction of the Housing Act on August 1, 1902, were claimed by preparatory activity, and the first loans were not made until 1905. The development was as follows:

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[1] The figures given here and elsewhere are drawn from various sources which do not exactly correspond; the amounts of the loans granted and paid out each year are taken from official publications. The occasional divergencies, however, are not great enough to interfere with an accurate picture of the development of care for cheap housing or with mutual comparison.

Year	*Number of dwellings*	*Loans (in guilders)*	*Average amount per dwelling (in guilders)*	*Maximum of subsidies granted (in guilders)*
1905	31	46,500.00	1,500	104.30
1906	26	61,800.00	2,380	92.00
1907	786	1,423,544.54	1,810	1,774.00
1908	620	1,128,210.00	1,820	3,002.39½
1909	770	1,318,055.00	1,710	4,767.57½
1910	963	1,760,821.14½	1,830	661.49½
1911	1,416	2,915,685.25½	2,060	2,963.77½
1912	2,670	6,493,221.61	2,430	18,832.59½
1913	3,655	8,437,741.58	2,310	2,948.03
1914	4,837	12,953,033.43	2,490	20,637.94½
	15,774	36,538,612.56	2,260	

Eighty-eight of these loans, to a total amount of approximately 2,429,000 guilders were for the immediate activities of the communes, and 370, of about 33,200,000 guilders, for the operations of authorized associations, the whole number of the latter at the end of 1914 being 379 in 263 communes. The development of building during these years is best shown by the loans paid out, these being as follows:

Year	*Amount (in guilders)*
1905	16,500.00
1906	26,900.00
1907	243,329.34
1908	829,269.81
1909	1,242,900.42½
1910	2,017,683.75½
1911	1,841,060.12
1912	3,900,484.50½
1913	5,321,966.41
1914	7,001,904.75

Though the greater number of building schemes carried into execution had little, if any, connection with condemnations, the clearest picture of the significance for the whole country of building as a consequence of the Housing Act is perhaps gained when these figures are compared with the number of dwellings condemned during this same period and with the total of houses inhabited according to the results of the census of December 31, 1909. As already stated, loans were granted in 1905-1914 for erecting 15,774 dwellings; in 1902-1914, 13,820 were condemned, and by the census of 1909, 1,267,252 were inhabited.

2. INITIAL MEASURES IN SUPPORT OF HOUSING-ACT BUILDING

1. *Depression in Building.*

The outbreak of the War exercised an immediate influence on house-building as on so much else. Mobilization deprived various branches of the industry of large numbers of skilled laborers, and this, combined with uncertainty lest the Netherlands might at any moment be drawn into the conflict, put a stop to many undertakings and caused hesitation in executing projects which had already advanced beyond the stage of preparation. From the very first, every effort was made to control the confusion in industrial life and to combat the unemployment which was its sequence. On August 10, 1914, the Royal National Relief Committee was created at the instance of Her Majesty the Queen, and immediately devoted itself to the problem of maintaining the activity of industry, agriculture, and horticulture. As the first step to this end, it sought to restore the inland goods-traffic, which had almost stopped in consequence of the demands of mobilization and the transportation of troops on the railways, while the Government urged the necessity of affording every possible opportunity for work, and themselves set the example. Without thinking as yet of the dangers of a future housing crisis because of discontinued building, the prosecution of this activity was advocated as a means of furnishing occupation, since at that time no one could imagine that the War would last so many years.

As a result of these considerations, not only was the execution of interrupted projects very quickly resumed, but the preparation of new plans was continued, and the Government advanced fresh sums for these purposes. While in 1913 the total amount of such loans had been almost 8.5 million guilders, they rose to 12 million in 1914, and to nearly 12.5 million in 1915.

2. *Regulations Regarding the Rate of Interest on Loans.*

As we have seen in Chapter 1, the rate of interest on loans granted by Government depended on that at which the State itself could borrow, the exchange rate of the 3 per cent National Debt being taken as the standard. One of the first measures at the outbreak of war was, however, the closing of the Amsterdam Stock Exchange; and since, therefore, there was no official rate, it was proclaimed on November 18, 1914, that while the Bourse was closed, interest would be reckoned at the exchange for the 3 per cent National Debt as gazetted in the *Staatscourant* of July 27, thus fixing it at 3⅞ per cent. A Royal Decree of March 6, 1915, however, severed all connection with the exchange-rate of the National Debt by stipulating that, as long as abnormal conditions prevailed, interest for loans should be determined in each special case by Government, though they could never be lower than 3⅞ per cent. At the same time, the Housing Act was amended, on April 16, 1915, so as to make it possible to lighten the burden of the annual charges by extending the period for the repayment of loans to seventy-five years, though it was proposed to allow more than fifty years only in cases where the character of the building schemes justified such action.

This measure was likewise a means of lessening the sacrifice which the State was compelled to make in accepting a lower rate in this period of the rise of interest. It was customary, accordingly, to divide loans into two categories: one for the site, and the other for the building. Since one could assume that the value of the site would seldom diminish, the period for a loan for purchasing it could easily be set at a maximum of seventy-five years, and an interest one-half per cent higher than that for a building loan could be obtained without burdening the profits. In the case of building loans, however, interest was raised above the initial rate of 3⅞ per cent only in special instances. This was done, in the first place, when the rent to be charged made it possible to pay off the loan in fifty annual instalments; and, in the second place, when it was safe to assume that, though payment could not be made as in the former case, the solidity of the structure warranted the supposition that, with proper care, the house would last for the longer period, and was so arranged that it could be considered a good dwelling throughout that length of time.

The limitation of rent-raising to special cases resulted in the phenomenon that, generally speaking, the State alone made sacrifices in carrying out building schemes during this period. Since this was not in harmony with the principle of the legal regulations, it was soon changed, and the decision was reached that the rate should be raised generally, at first to 4½ per cent. If it should then become evident that this increased rate forbade ultimate profits, further subsidies should be provided in the form of temporary contributions, provisionally for three years, the expense being borne equally by the State and by the commune. These extraordinary subsidies could not amount to more than the difference between the annual payment due and the annual payment reckoned at the rate of 3⅞ per cent for a building loan and 4⅜ per cent for a loan to purchase land.

3. *Measures Regarding the Increased Cost of Building Materials.*

The advance in the price of materials, which became increasingly evident in the course of 1916, affected building more seriously than the rise in the rate of interest. Timber, zinc, and glass were the first to become more costly, and, consequently, the expense of building was already 25 per cent higher than before the War. This indubitably led to a general depression in building, particularly in the construction of workmen's houses. Even where increased rents gave assurance of financial profit, there was reluctance to build because of apprehension that, when prices should fall in the future, buildings constructed at heavy expense would be unable to compete with houses erected subsequently. It soon became clear that measures must be taken to ensure continuance of the construction of workmen's dwellings.

Since obstacles attended every other solution of the problem, the Government determined to combat the difficulties arising from the increased cost of materials by granting subsidies. These could not, however, be based on the difference between the cost of materials then and before the War, especially if the assistance was to be rendered in the form of a single grant. This decision was due to the fact that buildings so constructed would be obliged to compete with those erected after return to normal conditions, and since it could not be assumed that prices would fall, within any predeterminable period, to the level prevailing before the War, estimates based on prices at the moment would entail an outlay far too great. It was preferable, therefore, to employ the system of annual instalments created by the Housing Act, thus rendering it possible to make allowance for changing circumstances. The decision was reached, accordingly, that, in case of necessity, the State should grant the commune receiving a loan financial aid toward the payment of an annual instalment. The maximum for such a subsidy was fixed at half the difference between the sum so due on the account of the building loan and the amount which would similarly have been paid, at the like rate of interest, if the grant had been made for construction with materials obtained at pre-war prices. At first this subsidy was to be guaranteed until one year after the conclusion of peace between Great Britain, France, and Germany, after which the state of affairs might be studied further and treated as circumstances should require. In this case also the expense of the State and of the commune was to be equal.

Besides these two subsidies—one for interest and the other for cost of materials—financial assistance might be given in special cases to certain families evidently unable to pay an adequate rent (subsidies for economic backwardness). The heads of families concerned were required to fulfil three conditions if they were to be eligible to receive such assistance: they must have lived for a minimum of three years in succession in the place where the house was; they could not work outside that place; and they must have been married at least a year. This latter condition was imposed to prevent hasty marriages so as to gain the advantages of the contributions and cheap lodging.

Early in 1917, the State abandoned the requirement that it and the commune should share equally in the expense of subsidies; and it then declared that, except in special cases, it would contribute at most 75 per cent toward deficits arising from increased cost of materials. At the same time, it was determined that such assistance would be given at the most only until the end of 1921, with the understanding that every special case would be studied each year to determine whether and how far it might require continued assistance. This time-limit was set because it could apparently be assumed that at its expiry permanent conditions would have come into existence which would render definitive regulation possible. If by that time prices for building material either had not fallen, or had fallen only slightly, conditions in general would surely have shaped themselves to the altered circumstances, and in either case the subsidies might be terminated.

In the regulations thus drawn up, a new element was taken into consideration, the question as to how far industry might itself contribute financially in many places toward the cost of building houses. The cessation of importation of many commodities because of the War had led here and there to the extension of existing industries or to the creation of new ones, and, consequently, to increased local demands for workmen's quarters. It seemed logical, therefore, to make the industries share in the cost of construction, especially as there was an unusual element of risk because of the uncertainty whether the industries in question would be able to maintain themselves after the return of normal conditions. The promise of loans by industry formed one of the special cases mentioned above in which the State restricted its contributions for the purchase of materials to less than 75 per cent; although, on the other hand, the Government might give more than that percentage if the financial condition of the commune concerned rendered such a course necessary. The State likewise took the position that if other items of the cost of exploitation besides the annual instalments should prove higher than under normal circumstances, the consequent increase in expenditure should be met by a general raising of rent. Nevertheless, the Government emphatically desired attention to be given to providing requisite shelter for workmen who were economically less advanced, for there was some fear that the housing societies sought tenants preferably among the well-to-do classes of workmen, aiding them, it is true, to find cheap dwellings, but thus limiting the beneficial results of their activities.

4. *Divided Crisis-Subsidies and Their Application; Rent-Policy.*

The system of double crisis-subsidies, or, perhaps more accurately, of divided crisis-subsidies, lasted essentially unchanged for two years, though difficulties increased, and the Government was pressed from several quarters to create better conditions for promoting cheap housing. At first, however, the State was reluctant to do this, for the disadvantages could generally be obviated by lowering the percentages of the operating expenses, based on the building cost, particularly for upkeep, insurance, ground taxes, unrealizable rents, and general outlays. The Minister accordingly announced that a collective rate of 1.46 per cent could be accepted instead of 1.75 per cent, as had formerly been the rule. On the other hand, for the reasons already given, the Government failed to approve proposals to lighten the burden of the annual instalments by lengthening their term of maturity, for which, as we have noted above, an amendment of the Housing Act had opened an opportunity.

The desirability of limiting subsidies obliged the Government to consider the problem of renting buildings constructed by loans. This question was twofold: what rent the tenants of new houses could pay; and whether, in case a building association or a commune had already built with the aid of a loan in consequence of the Housing Act, a part of the deficit to be expected from a new plan could be covered by raising the rent of the houses previously constructed. To make rents and wages correspond, the Minister of Finance and the Minister of the Interior were authorized to fix an income-limit for each projected scheme, and persons earning more than that amount were no longer considered as tenants for the houses so to be constructed. Furthermore, an average rent was fixed for each scheme, the basis being an average income less than the income-limit. As a rule, this rent could not be less than one-fifth or one-sixth of the tenant's average income. A somewhat lower amount might, however, be accepted in communes where local conditions forbade asking a rent equal to one-sixth of the tenant's income. The income-limit was defined on the basis of the family earnings, with the understanding that only half of the wages of children living at home and over fifteen years of age would be included in the calculation.

The subsidies were fixed according to the average rent, but the associations were at liberty to determine the final price asked. On the other hand, the individual system of deciding and controlling rent was retained in subsidies granted for economic backwardness. Regarding rents for houses previously built, the Government held that it was justifiable to raise those for dwellings constructed before January 1, 1916, to cover, either in whole or in part, the higher cost of houses erected after that time by the same commune or association; though it was necessary to consider whether the Rent Restriction Act[2] permitted such a course. The Government accordingly desired to be informed when a cantonal judge, passing on such a case, might seem to be of opinion that the Act forbade the desired raise; and the Minister of Justice would then request the Attorney-General of the High Court to file notice of appeal in the interest of the Act.

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[2] See below, p. 182.

5. *Statistics of Building under the Housing Act, 1915-1919.*

The development of building workmen's dwellings during the War may be shown by the following figures:

Year	*Number of dwellings*	*Loans (in guilders)*	*Average per house (in guilders)*	*Maximum State subsidy (in guilders)*	*Average per dwelling (in guilders)*
1905-14	15,774	36,538,614.56	2,260	....	..
1915	5,885	12,345,715.29½	2,160	106,055.48	18
1916	4,363	10,911,794.86	2,500	143,372.55	33
1917	11,314	39,215,498.11½	3,470	324,347.66	29
1918	9,613	49,525,709.71	5,150	651,297.23	68

The rate of interest for these loans was 3⅞ per cent after March 6, 1915 (4⅜ per cent for site-loans after April 16, 1915); 4½ per cent for both types after December, 1915; and 4¼ per cent for both after December, 1916. Loans granted were paid out as follows (in guilders):

1915	11,167,430.67
1916	9,890,082.70
1917	16,513,181.42½
1918	37,028,801.83½

The number of houses condemned steadily diminished during these years:

1915	697
1916	395
1917	255
1918	193

The number of authorized associations, amounting to 379 on December 31, 1914, rose to 415 in 1915, to 478 in 1916, to 555 in 1917, and to 660 in 1918.

3. INITIAL MEASURES IN AID OF PRIVATE BUILDING ENTERPRISE

1. *Activities of the Royal National Relief Committee.*

The increasing cost of building materials, which became more and more evident in the second half of 1916, inevitably exercised a prejudicial effect upon opportunities for employment in the trades concerned. Accordingly, the Royal National Relief Committee, whose creation and functions we have already noted, were obliged, early in 1917, to turn their activities in this direction; and they began by giving considerable subsidies to works undertaken by various Communes. In making these funds available, the question of their destination was considered as well as whether the plans to be executed would constitute a powerful agency in combating unemployment; for the primary motive was amplification of dwelling accommodations.

Since the scarcity of houses increased, partly as a result of the influx of foreigners and of Hollanders formerly residing abroad, and partly in consequence of obstacles in meeting this deficiency because of the high prices of materials, the Relief Committee determined to promote house-building systematically. State aid was limited to assisting the construction of workmen's dwellings in the strict sense of the term, so that the Relief Committee resolved to restrict their activities to houses with a rental between the limit fixed by Government in some communes as a maximum for Housing-Act dwellings and 100 per cent more. For building such houses, thus intended for the lower middle class, the Committee gave a subsidy of 25 per cent of the cost of construction, the following conditions being attached to such loans: (1) the houses might not be alienated within ten years without the consent of the Relief Committee or, in case of its liquidation, of the Minister for Finance; (2) during that period the rents fixed at the time of construction could not be raised. To guarantee the fulfilment of these conditions, a second mortgage was required, if necessary, after a first mortgage to a maximum of 70 per cent of the value. So long as the stipulations were fulfilled, the mortgage carried no interest, but if, in the opinion of the Committee or of the Minister, the regulations were transgressed, 5 per cent might be charged.

At first the amount of the subsidy could not exceed a sum calculated upon the number of cubic meters measured from the base of the foundation, and reckoned at the rate of 13 guilders per cubic meter, while the space from the ground floor might not exceed 450 cubic meters. As a result of the constant advance in the cost of materials, the maximum subsidy was raised in 1918 from 3.25 to 3.75 guilders. The armistice caused a sudden depression in building, since many expected a rapid decline in the price of materials, though at first this anticipation was not realized.

The subsidizing of building for the middle classes came to an end on November 1, 1919, when the Relief Commission was liquidated, though the subsidies already granted were not withdrawn. In regulating this latter category at the end of 1920, it was found necessary to raise the rate from 3.75 to 4.25 guilders per cubic meter, while the rental limit for Rotterdam and The Hague had to be advanced from 520 to 575 guilders. The total subsidies granted by the Relief Committee for this activity amounted to 5,945,200 guilders, of which 5,510,750.20 had been paid out at the time of the settlement in January, 1922,[3] this money having been given for erecting 345 houses by communes, 926 by building associations, and 2,255 by private contractors. Of these, 1,835 had been built at The Hague, 300 in Utrecht, 230 in Rotterdam, and 149 in Delft, the remainder being divided among forty-eight communes.

2. *State Aid.*

The measures taken by the Relief Committee to assist private building enterprise and to promote extension of housing space were marked by freedom from all official interference; but, on the other hand, efforts were made to interest the Government in advancing private building. This led to the Royal Decree of July 18, 1918, which made it possible to grant subsidies to communes, under safe conditions, for promoting private enterprise. The first step in this direction was prompted by the fact that in various places conditions were such as to render it desirable to stimulate this activity to renewed coöperation in house-building. The position of the Government was that it could not restrict itself to removing the obstacles which had halted private construction, but that it must also see that the houses to be erected should meet in full the needs of those classes of the people who suffered most from the prevailing crisis in housing and whose requirements must be considered in renting dwellings, while precautions must also be taken to prevent the loans from degenerating into preference of private parties. Furthermore, the State intended to have no direct dealings with the builders, so that, except for certain provisions still to be stipulated, it could confine itself to retaining the right of approval of the regulations to be made by the communes.

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[3] The activity of the Relief Committee may be seen from the fact that the total of their balance-sheet was then 89,999,914.20½ guilders, with a surplus of 1,554,826.11 guilders. The total sum provided by private individuals was 5,049,770.12 guilders, and the Royal Treasury contributed 84,650,000 guilders, though originally it had been the intention that the amounts given by the latter should not exceed those furnished by the former.

The government points of view involved peculiar difficulties, since its conditions for the attainment of the latter of its aims could be considered by the private contractor as a new obstacle which tended to augment his risk, so that it appeared necessary to increase the subsidy. Accordingly, the decree contented itself with giving general provisions, leaving all else to the communes, subject to the approval of the Minister. Financial aid from the State could not be more than thrice the amount contributed by the communes for the same purpose; subsidies could be given solely to provide for dwellings necessary for workmen and the lower middle class; and their rental could not exceed an amount fixed by the Minister for the commune in question.

These stipulations were executed only in very limited degree, for they were changed in the following year; and according to the Government Financial Report for 1919, the outlay on this account was not more than 96,083.35 guilders.

4. THE HOUSING SHORTAGE

1. *Transition from Measures Promoting Normal Construction to Those for Meeting the Housing Shortage.*

The measures considered hitherto may in a sense be regarded as means for promoting normal building, but gradually it became evident that they were insufficient to prevent the development of serious defects. At the outbreak of the War, the return of Netherlanders from abroad and the influx of refugees had increased the demand for dwellings; but, on the other hand, mobilization had eased this situation because many households were broken up and because marriages were less numerous. The armistice with its consequent demobilization had an opposite effect. The building trade was already suffering from a depression which government measures had countered only imperfectly and in the worst cases, and now conditions made the situation still worse.

The results of the depression were not merely manifested in retarded increase of housing space, but gradually affected existing dwellings. The rise in the interest rate incited even house owners who had not yet felt the consequences of this advance in the form of more costly mortgages, to increase the rent of their properties wherever possible, while, on the other hand, there was no check in the shape of an adequate supply of new homes at reasonable prices. At first, existing legal stipulations seemed to give the Government the necessary weapons for the battle in behalf of housing, but the steady progress of the shortage proved that they were inadequate. The task of the State was threefold: it was obliged to contrive measures which would ensure full use of existing buildings; it must provide for the crying needs of the moment; and it must take steps to increase the permanent number of dwellings.

2. *Measures Regarding Existing Dwellings; Rent Restriction Act.*

In the nature of the case the rise in rents first affected dwellings which were usually let for short periods. The fear that undesirable conditions might result from this soon caused pressure to be brought to bear upon the Government from various quarters to limit advancing rents by legal regulations. In consequence of this, the Rent Restriction Act of March 26, 1917 (*Staatsblad* No. 257), was passed to prevent unjustifiable increase in the rents of dwellings of minor value. This Act ensured the appointment of Rent Commissions wherever necessary to prevent unreasonable raising of rents; and these were composed of five members: two represented the parties interested (tenants and owners), while the other three (President, Vice-President, and Secretary) had to be neutral persons. These Commissions fixed the rent of a house either at the request of the owner who desired to increase the rate or of the tenant who complained of the amount he was asked to pay, the standard of calculation being the normal rental of the house in question on January 1, 1916. The only admissible reason for advancing rent was an increased expenditure which the owner was obliged to make for the structure. A determination of the Commission to reduce a rental might be given retroactive force dating at earliest from October, 1916, and appeal might be made to the Cantonal Judge from their verdict; but since the rulings of the Commission were not valid after six months, a new decision might then be asked.

As the title of the Act implies, its operation was confined to dwellings of low rental, and this was determined by tables of higher or lower maximum rents to be adopted according to the character of the commune in which they were valid. This limitation was revoked in March, 1918, and the Rent Restriction Act was then declared to apply likewise to all rented dwellings of higher cost, with the understanding that the normal rate for the house in question on January 1, 1918, was to be considered the standard, and that the decision could not be retroactive earlier than that date. That this Act, like others to be discussed later, was a special temporary measure is clearly shown in its concluding paragraph: "It shall be void six months from the day when We, on the advice of the Council of State, shall have declared that the present extraordinary circumstances have ceased to exist."

3. *Tenant's Eviction Act.*

The sphere of the Rent Restriction Act was extended by the Act of March 25, 1918 (*Staatsblad* No. 182), which regulated a kindred matter. The limitations placed on the raising of rent had led many owners neither to renew leases nor to rent houses when they became vacant, but to endeavor to sell them as advantageously as possible. The increasing demand not only made this course easily successful, but led to speculation in houses that either were or soon would be empty; and the purpose of the Act in question, named the Tenant's Eviction Act, was to prevent the eviction of tenants, under the extraordinary conditions then prevailing, without sufficient reason. It gave the tenant the right, within a week after receiving notice to leave, of appeal to the Rent Commission, which granted the petition to extend the lease if it was evident that during his term of occupancy the tenant had properly fulfilled his obligations and that there was reason to accede to his request. Thus the Commission could extend the lease to a maximum of six months in each case and do this repeatedly; but either party could appeal to the Cantonal Judge from the Commission's ruling. Furthermore, at a tenant's petition, a new lease might come into force on the expiry of the old one without a previous notice to quit.

4. *Temporary Housing Provisions; Housing Emergency Act* (I).

The obvious necessity of providing some communes with their most urgent needs for housing space within the briefest time possible led to the Act of June 17, 1918, which came into force on August 1. This empowered the Crown to declare that the shortage of houses in a given commune was so serious as to call for immediate attention, and likewise to impose the obligation of building temporary dwellings. To this end the Royal Decree had to fix the number, size, and type of constructions to be set up, as well as the time within which this must be done; and it could also include stipulations to which the erection, maintenance, and use of the dwellings to be built must conform, and the period during which they should be available. Unless otherwise stated, the structures thus set up were regarded as temporary dwellings to which the provisions of the Housing Act did not apply. They might not be occupied more than five years unless the Crown allowed a longer tenancy, and in each case such permission was valid only for an additional year.

To enable the commune to meet its obligations, the State, under the conditions laid down in the general administrative regulations, assumed 90 per cent of the costs, including those of the land. The commune might also fulfil its duties by enabling an authorized society to build emergency dwellings. The law provides also for the case that the commune of its own accord wishes to build emergency dwellings or to have them built by an authorized society. Each year nine-tenths of the surplus must be paid to the State. Similarly, if a building was demolished or employed for some other purpose when it ceased to be used as a dwelling, the State received nine-tenths of the value of the materials or of the structure; and in case a government subvention had been granted for purchasing the site, a like proportion of the sale price or of the value of the land at the moment was to be repaid.

5. *Permanent Housing Provisions; Housing Emergency Act* (II).

To prevent any unfavorable influence on the building of permanent dwellings from the construction of emergency houses, the Housing Emergency Act stipulated that unless a commune did not yet show any need for lasting provision of dwellings or had already made such provision, it might be required to erect not merely emergency dwellings, but also permanent houses. An order might also be issued for the construction of the latter category independently of any obligation to build the former type. The Act further bound the communes, if the Crown so required, to make a list of dwellings and to maintain a Housing Bureau; and the expenses of both might be borne by the State to a maximum of one-half.[4]

6. *Agricultural Laborer's Act; Act Concerning Vans and Boats Used as Dwellings.*

Though sprung from other considerations than provision for popular housing, we may here mention, for the sake of completeness, the Agricultural Laborer's Act of April 20, 1918 (*Staatsblad* No. 259). This gave agricultural laborers who fulfilled stated conditions an opportunity to buy a cottage with land (a "holding") or to rent unoccupied ground. In many respects, this followed the system of the Housing Act, as in operating through communes and authorized associations with the aid of government loans; but it lacked any connection with the organs charged with execution of the Housing Act. Inspectors of Cheap Housing had no supervision over dwellings to be constructed in virtue of this Act, but it cannot be denied that the opportunity created by its liberal conditions was an important factor in promoting the erection of houses for the people.[5]

The extent to which the operation of this Act promoted building in 1919-1921 may be inferred from the loans granted and paid:

Year	*Loans granted (in guilders)*	*Loans paid (in guilders)*
1919	45,454.00	30,022.91
1920	547,146.60	281,329.18½
1921	1,636,395.31½	1,685,558.17

The statistics published do not indicate the purposes for which the loans were made; but the Act itself limited to 4,000 guilders the amount for a holding, including initial urgent repairs to the land and existing buildings.

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[4] See, further, p. 188.

[5] The Royal ordinance for the execution of this Act (November 14, 1918; *Staatsblad* No. 589) fixed the annual interest on the loans at 4 per cent, to be paid at the outside in the fourth calendar year after the contracting of the debt. After that period, the interest and principal were to be extinguished in thirty annual payments, each 5⅘ per cent of the amount of the loan.

We may finally note that an Act was passed on July 26, 1918 (*Staatsblad* No. 492), regulating the use of vans and boats as dwellings. The purpose of the Act was twofold: police regulation of the occupants, and supervision of the equipment and use of the habitations in question. The Act construed vans and boats used as dwellings to be those exclusively or chiefly employed or intended as such; and habitation thereof was made contingent on written authorization from the competent Provincial Governor, such permission being given only when the petitioner had met the requisite legal conditions. Regulations concerning the equipment and use of such vans and boats were fixed by a general administrative order for the execution of this Act in a Royal Decree of July 28, 1919 (*Staatsblad* No. 530). The Act itself had been amended on January 11, 1919 (*Staatsblad* No. 16), so as to apply to such vans and boats already in use; and it came into force on October 15, 1919.

5. THE NEW CABINET

1. *The Plan of Operations.*

War conditions compelled the Cort van der Linden Ministry, though composed of members of the Left, to act as a coalition Cabinet and to do nothing that might give offense to the other parties. The Ruijs de Beerenbrouck Ministry, belonging to the Right, and coming into office in September, 1918, owed their existence to the result of the elections after the amendment of the Constitution by their predecessors had introduced a general franchise. The new Cabinet felt themselves unhampered in any way, since the World War came to an end shortly after their accession to office. This fact, combined with the manner in which the revolutionary agitation of November, inspired by examples given abroad, had terminated in a general conviction that the times imperiously demanded sweeping social legislation, exercised a deep influence on the measures taken by the Government with regard to cheap housing.

It became clear that the Cabinet intended to devote themselves seriously to the housing question when, directly after assuming office, they created a special Ministry of Labor with charge of popular housing, which hitherto had been under the jurisdiction of the Ministry of the Interior and further with charge of all other matters of a social nature.

Besides the immediate measures which conditions demanded, one of the first acts of the new Minister of Labor, Dr. P. J. M. Aalberse, was to reorganize the Public Health Service, which included cheap housing. It had long been seen that the existing organism of this service, based on the Health Act of 1901, was faulty, but efforts to change it had encountered strong opposition. At the head of the organization was a Central Health Council, intended to be the center from which all administration should proceed, and also designed to exercise advisory functions. Under this Council was the Inspection Board, composed of Inspectors-in-Chief for each territory, who were to transmit the orders of the Council to their subordinate Departmental Inspectors. Finally, there were Health Committees, acting as advisers to the communal and provincial authorities, and to the Inspectors and Inspector-in-Chief under whose supervision they worked. The guidance which the Health Council was supposed to give was not, however, practically realized since the Inspectors-in-Chief were members of the Council, in which they at first constituted a majority. There was, moreover, little evidence of direction by the Inspector-in-Chief, in the first place because there was no central control, and in the second place because in many cases they felt themselves to be less expert than the Departmental Inspectors.

Besides radically amending the Health Act in the interest of the organization which he desired, the Minister intended to modify the Housing Act; and he withdrew a draft bill which had long been pending because he wished to reconsider the entire problem. Since he saw, however, that sweeping changes could not be made in a short time, he determined to obtain everything possible by introducing small bills to control special points and by amending the general administrative stipulations. He desired, moreover, to regulate the so-called shanties, but before undertaking a systematic campaign to overcome the housing shortage he felt that he required additional data, which he hoped to secure by a dwelling census.

2. *Measures Connected with the Housing Act.*

Two modifications of the Royal Ordinance, the Housing Orders of January 14 and May 17, 1919, were intended to simplify the formalities of authorizing associations and to enable impoverished communes, so long as extraordinary conditions should prevail, to meet the deficit which they must expect from rentals by the aid of subsidies to a higher amount than half of the annual instalment due on account of the loan. The Act of June 27, 1919 (*Staatsblad* No. 422), was designed to simplify the formalities of obtaining loans by repealing the requirement that the Deputies of the Provincial Council must approve the relevant decrees, and also to make provision for optional plans of extension. The amendment of Article 35 of the Housing Act by an Act of even date (*Staatsblad* No. 423) had a twofold purpose. In the first place, it sought to simplify the treatment of petitions for loans. Hitherto, a special Advisory Board had been consulted in these cases, and if its opinion was favorable, it was combined with a draft of the Royal Decree for granting loans, the Board being further charged with supervision of the payment and the utilization of the moneys granted. The Minister was of opinion that the functions of the Board could be transferred to the Department, since they had become very extensive while the problems themselves had gradually reached uniformity. The transformation of the Board into a Housing Council, moreover, gave an opportunity of obtaining advice in all matters relating to cheap housing.

Originally, this Council consisted of twenty members, but the number was increased to a maximum of twenty-five by including all classes whose business brought them into connection with the problem. Contact was maintained with the Ministries concerned by appointing to membership the Director-General of Public Health (Chief of the Public Health Division in the Ministry of Labor) and the Treasurer-General (Chief of the General Treasury Division in the Ministry of Finance); while after the reorganization of the Health Service the Inspector-in-Chief for Cheap Housing was added to their number.

This reorganization came into effect with the Act of November 27, 1919 (*Staatsblad* No. 784), its principal modifications being as follows. The Central Health Council was replaced by a Health Council whose functions were exclusively advisory. The State supervision was carried out, under orders from the Minister, by Inspectors-in-Chief, Inspectors, and Health Commissions. Instead of the territorial Inspectors-in-Chief of the earlier organization, the Act now recognizes Departmental Inspectors-in-Chief, each controlling a definite subsection of the State supervision of health and directing inspectors charged with that area. Unless the Crown rules otherwise, the Inspectors-in-Chief are also members of the Health Council, this being the case with the Inspector-in-Chief for Cheap Housing in virtue of the Royal Ordinance of February 19, 1920. The new Act came into effect on September 1, 1920, and the Act amending Article 35 of the Housing Act on January 20 of the same year.

Among the legal measures connected with the application of the Housing Act mention may also be made of the Act of July 5, 1920 (*Staatsblad* No. 329), amending the Expropriation Act. Not only did this cause considerable modification in the general regulation of the procedure in expropriation, but the expropriation section of the Housing Act, incorporated in the Expropriation Act, was also amended in the interest of cheap housing.

The proposed revision of the Housing Act was determined by the Act of February 19, 1921 (*Staatsblad* No. 73), the principal changes being as follows. (1) Plans for extension were sanctioned by ruling that authorization to build would be refused if the scheme proposed failed to correspond to an extension-plan drawn up in accordance with the Act. (2) Communes or groups of communes were required to appoint one or more officials to supervise the execution of the stipulations regarding cheap housing. (3) The regulation of the Housing Bureau and of the housing census is now transferred from the Housing Emergency Act to the Housing Act. (4) The provisions for expropriation are extended to facilitate the execution of plans for extension. (5) Regulations concerning extension-schemes are improved. (6) The Housing Act now renders it possible to require communes to promote the building of dwellings either by their own activities or by making loans to authorized associations; and provision is also afforded, in case a commune is inadequately supplied with cheap houses and is not in a position to coöperate, for granting authorized building associations loans and subsidies directly from the Royal Treasury. This latter regulation was adopted chiefly on account of Limburg, where, in consequence of the energetic development of the mining industry, building was necessary on such a scale that the communes in that region could not be expected to assume so heavy a burden.

3. *Rental Acts and Housing Emergency Act.*

The continued shortage of houses gave rise to abuses, to combat which the Government needed stronger weapons until the supply could meet the demand. Although the Tenant's Eviction Act enabled those who had properly fulfilled their obligations to extend their occupancy by a maximum of six months in each case, it could not compel an owner to re-lease a house which had once become vacant. Consequently, dwellings which proprietors preferred to sell rather than to rent remained empty for long periods, in default of those willing to pay the extortionate prices demanded. The unusual circumstances called for corresponding measures to oblige selfish personal interests to yield to the general welfare. This end was attained by two distinct legal provisions, either one of which could be employed according to the nature of the particular case.

The less sweeping of these measures was the Rental Act of February 19, 1921 (*Staatsblad* No. 70), designed to prevent houses from being left vacant. By its stipulations the Rent Commission, with the consent of the burgomaster and the magistrates, may, if it is evident that no serious attempt is made to secure tenants for a house within their area, serve notice upon the owner to find occupants to the satisfaction of the Commission within a period fixed by them, but within one month at least. If this is not done, the Commission may rent the house in the owner's name for a maximum period of three years to anyone who may reasonably be expected to fulfil the duties of a tenant, and it may require him either to furnish security or to pay the rent in advance.

The second of the two measures under discussion had for its purpose the transfer of ownership of a dwelling to an organization working in the public interest. An Act of February 19, 1921 (*Staatsblad* No. 72), supplementing the Housing Emergency Act, renders it possible for communes, with the assent of the Crown, to expropriate, for meeting a housing shortage, dwellings which are either unoccupied or less than half occupied. In estimating the amount of indemnity for such expropriation, profiteering prices exacted under extraordinary and temporary conditions are disregarded. The expropriating parties may take possession immediately after approval of the Council's decision by the Crown, provided they deposit a sum fixed by the court. The same right of expropriation is recognized in the case of dwellings occupied by others than the owner if the latter fails to make the repairs required by law. The Act further stipulates that, in case of a housing shortage, either all communes or communes specially designated may be forbidden to withdraw dwellings from the purposes for which they are intended or to demolish them without the consent of the burgomaster and magistrates, who may make such permission contingent on certain conditions in the interests of execution of the Housing Act.[6] In case of neglect in such communes, the burgomaster and magistrate may have the houses repaired at the expense of the owner. Finally, the Act gives general powers to burgomasters and magistrates to refuse to allow dwellings to be erected or to be rebuilt either in whole or in part if the execution of such plans interferes with meeting the housing shortage.

The chief significance of both these laws lies in the fact that they prevented buildings from standing empty or being neglected. At the same time the Rent Restriction Act was amended by an Act of February 19, 1921 (*Staatsblad* No. 71). The purpose of this modification was to take a first step toward return to normal conditions by lightening the restrictions of the original Act on raising rents, for it became more and more evident that if private building enterprise was to be stimulated into activity, the rents of existing houses must be increased. To prepare the way for this, the amending Act availed itself of two expedients. In the first place, it took as its point of departure the rate of rent prevailing on, or immediately before, January 1, 1916,[7] and January 1, 1918, increased by 20 per cent and 10 per cent respectively. In the second place, it permitted the Rent Commissions to allow systematic raising of rent until the house should yield a reasonable income, the limit for this being fixed by the Act at 50 per cent above the normal rate on the dates aforesaid unless radical alterations justified a greater increase.

It is important to note that the following categories were exempted from the operation of the Act: dwellings rented by public authorities or under the jurisdiction of the Department of Public Works; dwellings of authorized building societies; dwellings belonging to other societies, built with the aid of the communes and rented under their supervision; dwellings rented with arable land, pasturage, nurseries, and the like; and dwellings for which building permits had been granted after December 31, 1919.

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[6] A Royal Decree of March 24, 1921, extends this stipulation to all communes.

[7] The rent on January 1, 1916, regarded as normal by the original Act, was no longer taken as a standard.

4. *Provisions for Assisting Housing-Act and Private Building.*

A circular of June 25, 1919, gave notice of a new regulation for assisting building under the Housing Act. This limited the rate of interest to 5 per cent and replaced the divided emergency subsidies by a single contribution equal to the difference between the rent to be asked on the basis of actual building costs so as to yield an ultimate profit, and the amount to be paid by the tenants. Rentals must conform, as far as possible, to a standard corresponding to the change in conditions, and subsidies could no longer be demanded from the relevant industries.[8] Except in special cases,[9] 75 per cent of the subsidies were charged to the Government and 25 per cent to the communes, the annual disbursement being reckoned on the basis of the deficit to be approved. The average rent of a block of dwellings was to be fixed henceforth at a minimum which gave due consideration to costs of maintenance, rents, and local customs, but income limits were also to be set in each scheme.

For the first time, this circular laid down general requirements for the houses that were to be constructed. It defined a workman's dwelling as one with not more than five rooms and a kitchen. No further loans could be given for dwellings with bed-closets; and loans or subsidies could be granted only under very special circumstances and with restrictions as to renting in the case of houses with not more than two bedrooms. As a rule, a house must have a minimum of three bedrooms, at least two of which must have ample space for two large beds; it should contain in addition a living-room and kitchen, either combined or separate; and it might also have a drawing-room of smaller dimensions than the living-room.

The regulations for helping private building enterprise were likewise soon modified when a Royal Decree of November 6, 1919, restricted such aid to the construction of dwellings for the middle class.

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[8] See p. 176.

[9] The mining area was immediately made such a special case. At the very beginning, in September, 1918, the Government declared themselves ready to bear 90 per cent of the deficit, but have now assumed the entire burden.

The principle was maintained that assistance should be rendered solely in the form of a cash contribution, three-fourths from the State and the balance from the commune concerned. In general, such subsidies could not exceed the difference between the actual costs of construction and one-and-a-half times those of 1914. In all other respects, the regulations were, generally speaking, analogous to those of the Royal Decree of July 18, 1918, though it was stipulated that the houses could not be rented longer than fifteen years, the decree of 1918 remaining in force with regard to loans already made.

A circular of July 30, 1920, laid down another line for lending assistance. Up to this date there was no connection between aid given in pursuance of the Housing Act and money granted for private enterprise, but this was the first time that both categories were considered in the same official document. The purpose of this was both to economize in promoting building schemes and to diminish deficits by raising rents. Accordingly, with reference to the Housing Act, a certain standard was adopted to which plans had to conform. Houses measuring less than 225 cubic meters should, generally speaking, yield a rental of at least 50 per cent of their cost of maintenance, those measuring between 226 and 275 cubic meters at least 60 per cent, and those measuring between 276 and 300 cubic meters at least 70 per cent. No loans or subsidies could be granted for houses of a content of more than 300 cubic meters. In the case of dwellings for large families, certain deviations from the standard were permitted both as to cubic content and as to rent. If upper and lower flats were built, the latter were not obliged to conform to the three-bedroom requirement of the circular of June, 1919 (though this remained valid in all other respects), provided the number of such lower flats did not amount to more than one-third of the whole. These regulations did not affect shops, since they and the flats above them were regarded as forming a unit which ought to yield a rent sufficient to cover the cost of exploitation. As regards dwellings for the middle class, subsidies could henceforth be given only for structures with a maximum capacity of 450 cubic meters, and their rental was to be calculated on a basis of between 170 per cent and 200 per cent of the building costs in 1914.

A Royal Decree of November 8, 1920, partly abandoned the system of granting only cash contributions to private enterprise by allowing a system of loans as well; and in connection with this, notification was given that bonuses for building dwellings would be allowed at a specific rate for each square meter of construction. The amount was to be fixed for a relatively short time for each commune willing to build on this understanding, and it was proposed to decrease the bonuses systematically in successive periods. They were to be granted primarily to private enterprise, though they could also be given to associations operating no more expensively than individual contractors. As a rule, they were free from restrictive conditions, so that the houses thus erected could be either rented or sold; but in case of necessity certain limitations could be laid down.

Since experience had shown that building was cheaper by private initiative than by contract, the bonuses could be considerably less than the subsidies thus far granted in virtue of the Royal Decree of November, 1919; and these bonuses were to be borne entirely by the State. If necessary, the Government could further promote building by granting loans in the form of mortgages in the sense that the commune with the State loan held the mortgage. This credit was to be advanced at a rate of interest corresponding to the standard prevailing at the time, and was provisionally to be 6 per cent until May 1, 1921, the rate for Housing Act loans having also been raised to this figure after December 1, 1920. The mortgage was to be paid off in fifteen years. These facilities could be granted only for plain, solid dwellings, whether for the middle class or for workmen, in communes where a sound building policy exercised proper supervision; and the fronts of the houses must satisfy reasonable æsthetic requirements.

A declaration of December 7, 1920, for the further regulation of the granting of bonuses and mortgages permitted the former to be allowed only for building dwellings with a maximum measurement of 450 cubic meters and, except in Amsterdam, forbade a bonus of more than 2,000 guilders per house. Such assistance was usually reckoned at the rate of 20 guilders per square meter, though in cases of necessarily expensive foundations 22.50 guilders might be allowed. The maximum advanced on mortgage was 90 per cent of the difference between the bonus granted and the building costs as estimated by three experts. On request, loans could be advanced on the bonus and mortgage, during building, up to a maximum of 90 per cent of the proposed cost of construction.

5. *Other Attempts at Adjustment; Prices and Wages.*

In the preceding sections, we have devoted our attention, in the main, to the way in which the Government was gradually obliged to endeavor to counteract the rise in the costs of construction and to promote the building of houses by steadily increasing their financial assistance. We shall now try to give, within the brief space at our disposal, some account of the reasons for this rise, and shall discuss the direct measures taken to exercise a favorable effect on prices.

We may first consider the prices of building materials, which showed a strong tendency to rise immediately after the outbreak of the War, at least in so far as this either stopped importation entirely, or at best gravely hampered it; while speculation made reliable estimates impossible. Gradually, however, costs became more stable, since various producers united and made binding agreements as to their charges. The formation of similar combines in all sorts of industry was furthered by official regulations, as by the installation of State Offices for various trade commodities, for the Government had not yet begun to negotiate with individual dealers, and must, therefore, seek to create group representation. Even after the armistice, such combines continued to exist for various commodities, since it was evident that foreign competition was not yet seriously to be feared both because of the great scarcity abroad and because of the preference for home products.

Two measures, however, favorably influenced the cost of building materials. In the first place, the Director-General for Labor succeeded, early in 1918, in reaching an agreement with the brickmakers by which they bound themselves to deliver definite quantities of their output for constructing cheap houses and for other altruistic purposes at rates less than the maximum set by the Royal Commission for Building Materials, his success in accomplishing this being due to the fact that he could control the fuel necessary for the brick trade. This measure, however, was not profoundly important since the quantity of bricks thus made available was only 10 per cent of the output, whereas house-building even then amounted to about three-quarters of the entire annual construction; but the position of the brickmakers was strengthened by the loss of part of their manufacture through a flood.

A measure of more general efficacy was the creation of the Central Supply Company for Building Materials, Ltd. (*Centrale Bouwmaterialenvoorziening*, commonly known as the C. B. V.), formed by the coöperation of the State Department of Public Works, the communes of Amsterdam, The Hague, and Utrecht, and the Union of Netherlands Communes. This organization proposed collectively to buy and distribute the requisite building materials on behalf of its affiliated groups. Beginning operations when the War was in full course, the armistice speedily confronted it with conditions wholly different. At first, nevertheless, it was able to secure noteworthy results, as was evident from the fact that a committee was formed to oppose it, while in 1920 it was boycotted by the Timber-Dealers' Association, joined by various other interested groups, among them the Association of Dealers in Building Materials. This hostility caused the Minister for Public Works to appoint a commission to investigate the activities of the Company and to decide whether the Government should coöperate to prolong its functions.

The second factor which seriously affected the cost of building was the disproportionate rise in wages. At first there was grave unemployment, but the powerful development of construction under the stimulus of the housing shortage soon transformed this situation into its opposite, at least in some places. The workmen, well aware of the strength of their position under these circumstances, successfully exploited it to raise their wages to a considerably higher scale, finally obtaining amounts that were so far in excess of those paid in other trades that they seriously prejudiced the solution of the housing problem, since those in the same station in other industries became less and less able to pay the rents demanded.

This trend in wages was not brought to an end without opposition or attempts to neutralize it. On the one hand, it caused lockouts and stoppage of building, and on the other hand, means were sought to decrease expenses, such as regular and systematic distribution of available labor, increasing the number of workmen by training the unskilled and the unemployed in other trades, importing workmen from abroad, organizing building so that more of the unskilled could be employed, modification of methods of construction so that, in the main, such workmen could do it (as by building with concrete), establishing executive associations of operatives in the building trades (the so-called building guilds), and forming, in coöperation with workmen's unions, organizations which could exclude the contractor without necessitating the authorities to build themselves.

In September, 1920, the difficulty of the problem caused the Minister of Labor to create two Commissions. The first of these was to advise the Minister in matters concerning (1) the distribution of the available labor supply, (2) the importation of workmen from abroad, (3) the regularization of construction, and (4) the training of workers, all this being with reference to civic building within the country. The second Commission was charged with (1) examining conditions in the building trade, (2) reporting how far such conditions seemed undesirable, and how they should be changed to meet the housing shortage, and (3) stating in their report what they considered reasonable conditions in the building trade. On April 7, 1921, and March 16, 1922, this latter Commission submitted two reports, the first dealing with the question of building sites, labor conditions, and management of construction, and the second considering the prices of materials and technical plans.

The conditions during the years under discussion are implied in the following figures drawn from these reports, which contain some data and points of view which will doubtless be of permanent value:

INDEX-NUMBERS OF THE FLUCTUATION IN PRICES OF BUILDING MATERIALS

(Prices in 1914 = 100)

	1914	*1915*	*1916*	*1917*	*1918*
Bricks	100	103	111	132-356	296-356
Tiles	100	107	114	164	320
Shell-lime	100-113	113	118-179	205-313	313-348
Timber	100-121	150-189	250-262	282-293	340-318
Cement	100	80	93	136-400	420-502

	1919	*1920*	*1921*	(*Beginning*) *1922*
Bricks	263-293	358-385	327-375	287
Tiles	358	385	363	268
Shell-lime	394-366	366	366-313	313
Timber	305-352	357-295	192	. .
Cement	502-283	348-385-295	270-180	180

The following table will give an idea of the difference between the wages of operatives in the building trades and those of other groups of skilled laborers, especially as they developed in the course of 1920. The figures are based on data gathered in Amsterdam, but it may be assumed that the same phenomena could be observed in other large centers, though in lesser degree.

Trade	*Average income per week in 1915 (in guilders)*	*Income per week on Dec. 31, 1920 (in guilders)*	*The same based on the pre-war price-level (in guilders)*	*Percentage of increase (+) or decrease (—) as compared with 1915*
Carpenters	18.20	53.78	24.30	+33.5
Masons*	19.70	59.40	26.80	+36.1
Municipal workmen	18.90	40.50	18.30	—3.1
Typographers	15.39	39.64	18.00	+17.0
Metal-workers	17.98	41.14	18.60	+3.4
Bakers	15.00	36.00	16.20	+8.0

* If the average weekly wages of masons engaged in new building are compared, the increase is still greater, being 21.60, 69.30, and 31.30 guilders, and +44.8 per cent respectively.

6. *Results.*

The measures taken by Government brought about an extraordinarily heavy development both of Housing-Act construction and of private construction. There could, however, be no thought of combating the shortage systematically, as the Minister had contemplated, for the data of the dwelling census were not yet available. It was assumed that assistance was needed in erecting houses wherever it was asked; but though this was probably true in the majority of cases, such a mode of procedure did not even attempt to expend funds economically according to the stress of circumstances. In view of the many requests for bonuses and their centralized consideration, it was practically impossible to operate in any other way, at least with regard to private enterprise. The result was, doubtless, local overproduction under the name of middle-class dwellings, and occasionally there was speculation in the bonuses granted. Premiums seem sometimes to have been given for buildings that might have been effected without them, and in the rural districts especially they were more than once asked and granted for a man to construct his own house. A further circular drew attention to the fact that loans had no such purpose, but were intended solely to stimulate building.

The following tables show the development of Housing-Act and private construction under the influence of State aid during these years:

Year	*Number of dwellings*	*Total amount of loans (in guilders)*	*Average amount per dwelling (in guilders)**	*Total annual subsidies from the State Treasury (in guilders)*	*Average per dwelling (in guilders)*
1905-14	15,744	35,638,614.56	2,260	10,274.34	..
1915-18	31,175	111,998,717.98	3,593	1,225,072.92	..
1919	13,652	102,269,662.57½	7,490	1,115,424.48	85
1920	23,575	167,722,748.51½	7,110	2,912,382.71	123
1921	24,004	217,129,208.27	9,040	3,039,201.21	127

* The average amounts per dwelling are to be taken in their most inclusive sense, since they embrace the costs for both site and building, and the annual contributions for loans also comprise supplementary advances on subsidies granted in former years. Both here and elsewhere statistics not drawn from State Budgets and Financial Reports are taken from the *Overheidsbemoeiing in zake Volkshuisvesting* of H. van der Kaa, Inspector-in-Chief for Cheap Housing, published in the periodical *Volkswoning.*

The following cash subsidies were granted in accordance with the provisions of the Royal Decrees of July 18, 1918, and November 6, 1919:

Year	*Number of dwellings*	*Subsidies (in guilders)*
1919	593	1,554,710.17½
1920	3,904	14,736,364.22
1921	4,063	10,717,423.74

As regards bonuses, 44,759,551.29 guilders were granted in 1921 for 25,281 dwellings, besides 67,872,864.96 guilders for mortgages. The following table shows the Housing-Act loans paid in the years under review:

Year	*Loans (in guilders)*
1905-18	97,041,495.83
1919	73,684,609.59
1920	113,780,732.15
1921	183,125,336.06½
1922	92,472,649.45

The following sums were expended to promote private enterprise:

Year	*Expenditure (in guilders)*
1920	8,250,278.76½
1921	22,052,267.21½
1922	35,227,862.77

Furthermore, 1,771,387.46½ and 4,687,374.04½ guilders were spent in 1920 and 1921 respectively for constructing emergency dwellings.

7. *The Dwelling Census and Relevant Measures.*

As we have already seen, a dwelling census was one of the first steps proposed by the new Minister of Labor. For this purpose, he availed himself of Article 7 of the Housing Emergency Act, and a Royal Decree of July 3, 1919 (*Staatsblad* No. 465), accordingly required such lists to be drawn up in all communes having over 2,000 inhabitants on January 1, 1919, as well as in about forty smaller places, the latter being included either because they were decidedly urban in character, or were manufacturing centers, or were near larger communes. Other communes were exempted from the census as being of minor importance in this regard. Consequently an enumeration was made in 692 communes with a total population of 6,265,038, but was omitted in 426 with 513,665 inhabitants, the entire numbers in the Kingdom at that time being 1,118 and 6,778,703 respectively.

The mode of taking this census, the first independent one of its kind on such a scale, left much to be desired; and since the compilation of the final results proved very difficult, the statistics could not be published until March, 1921. This document gave rise to many widely divergent views concerning the housing shortage and to corresponding schemes for the construction that would be necessary in the years immediately following so as to overcome the crisis. The situation was not inexplicable, for various factors far from certain had to be taken into consideration, such as the number of dwellings available at a given moment, the density and annual increase of the population, the average size of the families, and the possibilities of building in each year.

In an annex to the *Annual Report of the Royal Housing Council* for 1921 the Director of the Central Bureau of Statistics, Prof. H. W. Methorst, made a calculation which, taking into account such necessary corrections as the anticipated increase in the marriage rate in 1920 and 1921, reached the conclusion that a total number of 1,519,500 dwellings would be needed by December 31, 1922. On the basis of the census statistics he estimated that 1,381,000 dwellings were available on December 31, 1919, so that after 1919 the difference between that number and 1,519,500, or 138,500, must be made good. If to this was added the necessary reserve of 1½ per cent, or 22,800, the deficit would be 161,000. Furthermore, it was justifiable to assume that a considerable number of dwellings must be demolished, and though no precise estimates were possible, these would doubtless amount, in three years' time, to several thousand, scattered throughout approximately 1,100 communes, so that on December 31, 1922, it would be necessary to reckon with a shortage of 164,000, without taking new supply into account. Even if it were supposed that the emergency dwellings, numbering some 4,000, need not be replaced immediately, still 160,000 new houses would be required; and if 1 per cent were taken as the necessary reserve instead of 1½ per cent the latter figure could be reduced by 7,600, and the result would be diminished to 152,400.

We may note that in his calculations Professor Methorst proceeded on the assumption that all families living with others—estimated at a total of 65,795 for the whole Kingdom—needed a separate house. The Minister of Labor, however, reached more favorable conclusions. In his circular of June 1, 1921, to the communal authorities he felt that his estimates enabled him to assume that at least 90,000 houses were then in course of construction or might soon be expected to be begun. It could scarcely be supposed that such a number could be built within two years, in view of the 28,920 skilled laborers engaged in this trade in the Netherlands according to the data available on January 31, 1921, although it was possible that more might be employed because of the marked curtailment in the erection of factories. These considerations caused the Minister to limit the output of building schemes which still continued to pour in, judging from the daily influx of requests for bonuses or assistance under the Housing Act. Since there were already local labor shortages, such overproduction would tend to disorganize and delay the building of houses. The Minister was convinced, in fact, that if the 90,000 dwellings were actually constructed within a reasonable period, the general stringency of the situation could be regarded as alleviated, except for special local conditions. According to his estimates, the deficit at the time was not more than 52,516, and even taking into account a growing shortage during the construction of the 90,000 houses already mentioned, it would appear that the anticipated production would outweigh the crying need.

For the time being, therefore, the Minister issued a general prohibition against submitting further requests for assistance in constructing dwellings. Such petitions for bonuses, or loans and subsidies in virtue of the Housing Act would not be considered unless they had already reached the Department. If, however, it should appear probable that certain communes would still need houses even after the execution of schemes for which bonuses or loans had been granted, financial aid for new plans for building workmen's dwellings could be taken under advisement, provided the labor supply was sufficient to carry them out. To receive this assistance in virtue of the Housing Act, nevertheless, evidence must be given that private initiative would be unable to meet the requirements; in submitting their requests the communal authorities were obliged to furnish data regarding both the need of dwellings and the labor available for construction, and henceforth loans made in accordance with the Housing Act must bear a certain relation to the bonuses.

This circular caused alarm, primarily among communal authorities and house-building associations. It was interpreted as meaning that all Housing-Act construction was stopped, and every one was convinced that it was motivated not merely by considerations of provision for cheap housing, but also by the pressure of financial conditions. Although the Minister stated, on interpellation, that there was no intention of excluding future loans in accordance with the Housing Act, the conditions attached were so burdensome that in most cases it amounted practically to the same thing. Consequently, many communal authorities and house-building associations proceeded to construct with the help of bonuses.

However regrettable all this might be, it certainly effected a considerable decrease in building costs such as nothing else could have accomplished, at least so quickly. The interrelation between these costs and the measures for financial aid became favorable instead of the reverse; and at the same time fear of overproduction doubtless coöperated in lowering the price of materials.

The following table shows how the Minister was able to diminish the bonuses at short intervals:

Date	*Bonus per superficial square meter (in guilders)*		*Maximum amount per dwelling (in guilders)*
Dec. 7, 1920	20		2,000
May 1, 1921	20	(up to 300 cubic meters; beyond that, 17)	1,700
Dec. 28, 1921	15		1,200
Feb. 20, 1922	12		900
March 10, 1922	8		600
Dec. 28, 1922	..		300

The effect of the fall in building expense is also revealed by the average cost for each dwelling for which a loan was granted. In 1921, the maximum had reached 9,040 guilders per house, but for 1922 the figures were 45,027,438.33 guilders for 7,269 dwellings, or an average of 6,332 guilders each; and the subsidies decreased to 245,560.82 guilders, or 34 guilders per house.

6. CONCLUSION

In looking back over our survey, one is struck by the fact that the Government of the Netherlands occupied a favorable position when it began to deal with the increasing shortage of houses, since it controlled practical legal machinery which enabled it to set to work immediately without the necessity of time-consuming preparations. Nevertheless, two important factors were lacking: knowledge of existing conditions, and adequate organization. It depended on local initiative whether the machinery could be put in motion; and though this initiative was stimulated by the energy of the housing inspectors, they had, in the main, to rely on their own judgment, for there was no central guidance. The Advisory Board contemplated in Article 35 of the Housing Act might have filled this gap because of its power to supervise activity throughout the country, but its exclusively consultative character robbed it of all competence in this regard.

Although this individual development possessed the great advantage that measures for improving cheap housing could be wholly adapted to local needs, the lack of contact between knowledge of conditions on the spot and central organization was seriously felt when accentuation of the crisis rendered central intervention necessary. State policy in regard to cheap housing had thus far been limited to coöperating in providing for local needs at the solicitation of zealous housing reformers. It was quite intelligible, therefore, that when the Government was called to take the initiative, they at first wholly excluded private building enterprise from consideration. The latter was in an awkward position. Rightly or wrongly, it felt slighted by the encouragement of altruistic house-building; and at the very time when its activity would have been most valuable, it lacked the necessary credit, while the passage of the Rent Restriction Act robbed it of incentive.

In the long run, however, facts forced the Government to perceive that it was impossible to dispense with the collaboration of private enterprise, and it found itself obliged to include it in its assistance. By its measures it succeeded in breathing new life into individual initiative, but here, too, the lack of knowledge of the actual situation was felt, a fault which was made worse by the fact that at first the restrictions of limited financial means were not realized. Although it was recognized that the private contractor would help make construction more economical, the combination of measures adopted and of opposing factors whose influence was much accentuated by the great extension of the building industry caused an initial retardation of the favorable results expected in this regard. The improvement so fervently desired came only after the stipulations concerning financial assistance had been curtailed under the pressure of monetary conditions.

By considering the mere statistics, one may gain an impression of considerable work with noteworthy results, though it is impossible to escape the conviction that with another scheme more might have been accomplished with the same outlay of capital. Nevertheless, much may have been won for the future if meaning is drawn from the lessons that have been given. The modifications in legislation have enlarged the competence of the communal authorities, particularly by improving the regulations as to plans for extension. The great communes have already devoted themselves to the problem of land policy; and even the smaller ones, which cannot permit themselves the luxury of buying the ground necessary for their expansion, may make such wise use of the powers granted them as to control areas sufficient for their needs. The requisite incentives to make such provision should come from the Government as well as from themselves; and it is equally desirable that knowledge of actual conditions should be amplified by periodical dwelling censuses, for only so is it possible to cope successfully with the ever-threatening housing shortage.

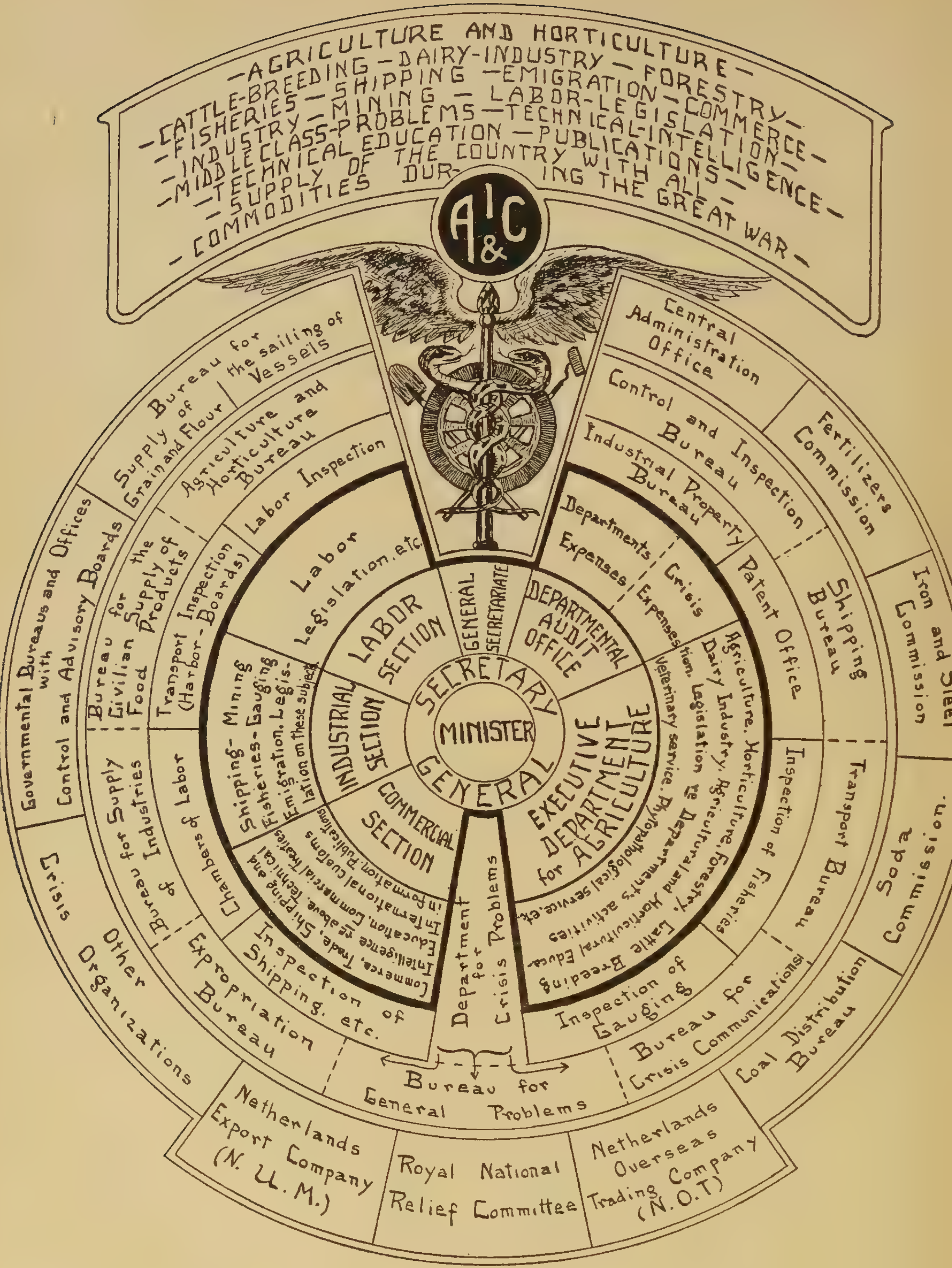
The point of view of the Government is that Housing-Act construction can again play a secondary part. Though this may be true, it should not be thrust too far into the background, for there are always sections of the people for whose homes provision can be made only along the lines of the Act, while the example of building to improve the housing conditions of the lower classes can ill be spared.

Finally, the question may be asked whether it will not be necessary to aid in building up a system of credit which will function properly when private enterprise will be able to resume its proper place. Only by a sound development of all necessary factors can a truly constructive housing policy become feasible.

IV

FOOD SUPPLY AND AGRICULTURE

BY DR. F. E. POSTHUMA


-AGRICULTURE AND HORTICULTURE-
-CATTLE-BREEDING-DAIRY-INDUSTRY-FORESTRY-
-FISHERIES-SHIPPING-EMIGRATION-COMMERCE-
-INDUSTRY-MINING-LABOR-LEGISLATION-
-MIDDLECLASS-PROBLEMS-TECHNICAL-INTELLIGENCE-
-TECHNICAL EDUCATION-PUBLICATIONS-
-SUPPLY OF THE COUNTRY WITH ALL-
-COMMODITIES DURING THE GREAT WAR-
A I & C
MINISTER
SECRETARY GENERAL
LABOR SECTION
INDUSTRIAL SECTION
COMMERCIAL SECTION
GENERAL SECRETARIATE
DEPARTMENTAL AUDIT OFFICE
EXECUTIVE DEPARTMENT for AGRICULTURE
Labor Legislation, etc.
Shipping-Mining Fisheries-Gauging Emigration. Legislation on these subjects
Commerce, Trade, Shipping and Intelligence re above, Technical Education, Information, Commercial Treaties, International Customs information. Publications
Department for Crisis Problems
Agriculture, Horticulture, forestry, Cattle Breeding
Dairy Industry, Agricultural and Horticultural Education. Legislation re Department's activities
Veterinary service. Phytopathological service, etc.
Departments Expenses
Crisis Expenses
Labor Inspection
Transport Inspection (Harbor-Boards)
Chambers of Labor
Inspection of Shipping, etc.
Inspection of Gauging
Inspection of Fisheries
Patent Office
Industrial Property Bureau
Control and Inspection Bureau
Agriculture and Horticulture Bureau
Bureau for the sailing of the Vessels
Supply of Grain and Flour
Bureau for the Supply of Civilian Food Products
Bureau for Supply of Industries
Expropriation Bureau
Bureau for General Problems
Bureau for Crisis Communications
Transport Bureau
Shipping Bureau
Central Administration Office
Fertilizers Commission
Iron and Steel Commission
Soda Commission.
Coal Distribution Bureau
Governmental Bureaus and Offices with Control and Advisory Boards
Crisis & Other Organizations
Netherlands Export Company (N. U. M.)
Royal National Relief Committee
Netherlands Overseas Trading Company (N.O.T)

IV

FOOD SUPPLY AND AGRICULTURE

INTRODUCTION

WHILE the following chapters will deal exhaustively, year by year, with the crisis in supplies and agriculture, and with the complicated system of measures to overcome the difficulties arising therefrom, we may preface them with a brief discussion of the main factors which influenced these regulations.

Immediately upon the outbreak of the War, the peculiar structure of agriculture in the Netherlands had to be taken into account; although the soil is far from being able to yield enough food for the dense population, yet what is produced is largely destined for export (animal, horticultural, and commercial produce), so that the imports of grain must be larger than would otherwise be necessary. Moreover, large imports of such materials as artificial fertilizers and fodder are needed. In connection therewith the government measures centered in the first place upon the three following problems: (1) imports of raw materials; (2) regulation of exports; and (3) the adaptation of home production to the needs of the population.

At first only the points under the headings (1) and (2) required governmental action. But when the imports of raw materials and foodstuffs became increasingly difficult, the third problem assumed more importance.

1. *Imports of Raw Materials.*

From August, 1914, the Government was obliged to give its attention to the provision of artificial fertilizers and fodder. In the autumn of 1914, measures had been taken to ensure the importation of sufficient artificial fertilizers for the coming harvest, but a special commission, known as the Artificial Fertilizers Commission was established in 1915 for this purpose. In 1918 its task was transferred to the Government Bureau for Artificial Fertilizers. Thanks to these two bodies, the supply was maintained, although during the last period of the War imports of fertilizers containing phosphoric acid and nitrogenous manure were quite insufficient.

At first, the solicitude of the Government regarding fodder was restricted chiefly to the importation and distribution of maize, for which they availed themselves of the services of the Committee of Grain Merchants at Rotterdam, of the Committee for the Grain Trade at Amsterdam, and afterwards of a special commission established for the purpose. Later on, the supplies were placed entirely in the hands of the Government Bureau for Distribution of Grain and Flour. The distribution of fodder during the summer of 1916 was entrusted to an extensive organization consisting of a central body, the Allotment Commission for Fodder, and the Provincial Fodder Bureaus. In July, 1918, the Allotment Commission was replaced by the Government Fodder Office under which the Provincial Fodder Bureaus functioned. The task of this organization became more difficult as imports ceased and agriculture had to be more exclusively devoted to supplying food. During the last period of the War, indeed, it was impossible to provide anything like the requisite quantity of fodder, so that the only solution of the situation was to diminish very considerably the numbers of livestock, especially pigs and fowls. The number of cattle declined from 2,301,532 in March, 1917, to 1,968,609 in March, 1919, and of pigs from 1,185,438 to 437,075. The output of animal products diminished to such an extent for various reasons, that whereas formerly a large part of them could be exported, they were now insufficient to provide for the home market, so that it became necessary to resort to rationing and to issue a prohibition against slaughtering (February, 1918).

2. *Regulation of Exports.*

In the beginning of August, 1914, when for some days traffic with foreign countries was entirely suspended, the prices of a number of products (eggs, vegetables, butter, cheese, and pork) fell to a level hitherto unknown, as a result of the impossibility of disposing of the entire output in the home market and because of the panic which this situation caused among many producers. Traffic, however, recovered very quickly, and there was a lively demand for exports from the Netherlands, especially on the part of Germany. The demand and the high prices resulting from that demand made it necessary to restrict exports in order to protect the home consumer. It was not enough merely to issue a prohibition of exportation which would encounter little opposition as regards products the home consumption of which exceeded the output: it was necessary to frame regulations which were very complicated and which were not always easily carried out, but which, to some extent at least, harmonized the conflicting interests of producers and home consumers. These regulations, during the first period of the War, caused the Government much labor and care. Broadly speaking, the rules adopted amounted to the possibility of exemption from export prohibition for a certain part of the production, on condition that the balance was made available for home consumption at prices which were considerably lower than those which could be obtained for export. Naturally, these regulations were at first only quite temporary; it was thought that the War would soon be ended. For various articles, central bureaus were established, and these controlled the execution of the regulations in their widest sense; on the one hand, what was necessary for home consumption had to remain available; on the other, the quantities placed at the Government's disposal had to be distributed. Thus, there was a Central Bureau for the export of butter, one for the export of cheese, one for the export of pigs and pork, and one for the export of potatoes. However, as the number of articles and the scope of distribution extended, it became more and more difficult to carry out the regulations properly. During the course of 1916, a new organization was established, in order to facilitate more direct coöperation by the interested parties. Associations of all the producers and exporters of each product supervised the regulations for exports and for placing products at the Government's disposal under the supervision of a commission appointed by the Minister of Agriculture, the distribution being centralized in the Government Central Administration Office for the Distribution of Provisions and being controlled by the burgomasters in the various communes. In this way the following unions of producers and exporters were established: the Butter Union, the Cheese Union, the Potato Union, the Legumes Union, the Central Vegetables Union, the Pork Union (later transformed into a Meat Union), the Union of Potato-Flour Makers, the Union of Factories of Dairy Products, the Egg Union, and the Sea Fish Union. To these were added subsequently the Central Fruit Union, the Sugar Union, the Central Seed Union, the Flax Union, the Hay Union, and the Poultry Union. As already mentioned, a Government Commission of Supervision was established for each Union as well as for the Government Central Administration Office. On the Government Commission of Supervision of the Government Central Administration Office one member of each of the other government supervision commissions had a seat.

When exports gradually dwindled to small proportions, so that home distribution became the main issue, while unrestricted trade was more and more eliminated in the interests of distribution, thus changing the character of the entire organization, the Unions were replaced in 1918 by Government Offices which were entirely governmental bodies. The Government Commissions of Supervision of the various Unions were abolished, and, instead of them, Commissions of Advice for the newly established offices were formed, these Commissions being elected from among the producers and the consumers. Thus, for replacing the provision unions, the following Government Offices were established: the Government Office for potatoes and for the working up of potatoes; for agricultural waste; for vegetables and fruit; for milk and cheese; for poultry and eggs; for sugar; for cattle and horses; for flax; for meat and fats; and for seeds.

3. *Adaptation of Domestic Production to Requirements.*

During the course of 1916, the importation of raw materials became more difficult, and it was foreseen that the Government would have to take drastic action as regards both production and distribution. In order to provide the Government with the necessary powers, the Distribution Act of 1916 was adopted.

Owing to the unrestricted submarine war announced by Germany as from February 1, 1917, the difficulties of the Netherlands' carrying trade increased enormously. When, shortly afterwards, the United States entered the War, the Netherlands' imports of fertilizers, fodder, and breadstuffs ceased almost entirely, and that country had to depend upon the products of her own soil. This rendered necessary what may be called a sudden reversal of her entire agricultural system, which had been characterized for many years by the strong preponderance of the production of animal products, a large part of the cultivated area having been set apart, in the form of grassland, directly for this purpose. Furthermore, agriculture, to a considerable extent, was in the service of cattle breeding, and in so far as this was not the case, the cultivation of various crops for export occupied a considerable place. The question now was to adapt as large a part as possible of the cultivated area to the raising of foodstuffs.

4. *Restriction of the Cultivation of Crops for Exports.*

Among the measures adopted to direct production in the desired course was the restriction placed on the cultivation of crops for export. The first ruling was made during the autumn of 1916. Broadly speaking, this regulation of cultivation provided that only a certain percentage of the average area under export crops during 1913, 1914, and 1915 should be allowed to each agricultural establishment. Whereas the burgomasters were in charge of the issuing of permits, the supervision of the regulations was placed in the hands of the provincial cultivation commissions which appointed inspectors for the purpose.

5. *Breaking up of Grassland.*

Besides the restriction on the cultivation of export crops, it became more and more necessary to break up grassland so as to make it arable. At first the Government offered premiums only for the cultivation of particular crops on grassland thus transformed, but this was not sufficient. During the summer of 1918 an Act was adopted authorizing the Minister of Agriculture to compel owners of grassland to break it up. In this connection the provincial cultivation commissions were abolished and replaced by provincial production offices, the managers of which were to supervise the cultivation regulations and also to be responsible for carrying out the Act for breaking up grassland. They were to be assisted by communal agricultural commissions. The Act for the breaking up of grassland was never fully carried into effect because the War ended and the situation of the country with regard to foodstuffs speedily improved to a marked degree.

6. *Prohibition of Unrestricted Trade in Agricultural Products.*

In the meantime, it became increasingly necessary for the Government to abolish unrestricted trade in agricultural products, to purchase the entire harvest, and to take over the distribution thereof. With regard to one product (rye), this had been done early in the

War. Before this time, the rye cultivated in the Netherlands was used for the greater part as fodder, the rye bread, which is the popular article of food in the eastern part of the country, being made mainly of foreign grain, imported in large part from Russia. Upon the outbreak of the War, the importation of this rye ceased, and the domestic production was commandeered to ensure supplies of rye bread, while rye commissions were established in most of the provinces in the autumn of 1914 to execute the relevant regulations.

In 1916 the Government was obliged to purchase the wheat, barley, and oats harvests as well. The arrangements connected with the purchase were placed in the hands of provincial bread commissions, the name under which the rye commissions now functioned. During that year, the harvests of legumes and of potatoes were also purchased by the Legumes Union and the Potato Union respectively. During 1917 and 1918, the number of crops to be delivered to the Government was extended to almost the entire harvest. In order further to promote the cultivation of foodstuffs and to obtain as much of the harvest as possible for the Government, the prices were fixed at a very high level. During 1917, a Government Commissioner for each province was appointed for the collection of grain, and he, in each instance, took over the task of expropriation and collection of the harvests.

In the meantime, despite all official measures, the prospects of providing food became darker and darker and the winter of 1918 was looked forward to with great anxiety in the Netherlands. When the maximum of distress seemed to be at hand, a sudden turn in the theater of war led to the armistice in November. Prospects of obtaining foodstuffs improved with comparative rapidity, and the arrivals of these and of raw materials for agriculture gradually increased, thus making possible during the opening months of 1919 the systematic withdrawal of the numerous regulations which had been made owing to the War.

THE YEAR 1914-1915

1. *Provision for Fodder.*

Before the War, the Netherlands used annually to import large quantities of fodder, maize, fodder cakes, barley, peas, and rye. Since home-grown rye was reserved for bread, the need of imported fodder exceeded that of other years; and in providing for these requirements, only maize and linseed cakes were taken into consideration. In order to prevent delay in arrivals, the Government now allowed importers, under certain conditions, to have such goods as were definitely destined for home consumption addressed to the Government. This, however, proved insufficient, and it became necessary for the Government to make purchases directly; but notwithstanding these measures, imports of maize left much to be desired up to about January, 1915.

2. *Provision for Artificial Fertilizers.*

With a view to providing artificial fertilizers for the harvest of 1915, a conference was held in October, 1914, at the Board of Agriculture. This showed that the quantity of Chilian saltpeter required in the Netherlands during normal years must be estimated at about 90,000 tons. Hitherto two-thirds of this amount had been imported by Antwerp and Hamburg houses, and one-third by a Dutch importer. In view of the considerable consumption of sulphuric ammoniac and the reduction in this amount because of the higher prices, the quantity required for the spring of 1915 was estimated at about 60,000 tons.

When the War broke out, only a small quantity was on hand in the Netherlands. At the same time, since Great Britain declared Chilian saltpeter contraband, all cargoes shipped from Chili were detained in British ports, so that considerable quantities of this fertilizer were accumulated in Great Britain. At first, efforts made to obtain these supplies from England through the mediation of a Netherlands importer and under consignment to the Netherlands Government were not successful; and as a result of this failure, a committee of four, representing importers, dealers, and consumers, was appointed in December to take up this matter. The committee first endeavored, with partial success, to divert to a port of the Netherlands some of the cargoes then in transit; but a number of the ships which had been sent to a British port for orders were detained so long that a large part of the saltpeter either did not arrive, or arrived too late. The assumption that it would be difficult to obtain sufficient Chilian saltpeter led many farmers to purchase sulphuric ammoniac during the winter. Of this fertilizer, indeed, a larger quantity than usual was used. The Netherlands contained fairly large stocks and considerable quantities could be obtained from England at reasonable prices.

Owing to the German and Belgian export prohibition of Thomas meal and superphosphate, the requirements of fertilizers containing phosphoric acid now depended almost wholly on the output of the Netherlands superphosphate factories. In October, there was a conference with representatives of these works, and they undertook to provide as much as possible, at a reasonable price, for the spring necessities of the Netherlands. Since an investigation showed that 125,000 tons would probably be needed, the manufacturers promised to supply the first 80,000 tons at a price varying between 3.10 and 3.20 guilders per 100 kilos. Later, this price was raised somewhat, owing to the difficulties of obtaining raw materials, especially sulphuric acid which hitherto had mainly been imported from Belgium. As a result of negotiations with the German Government, a considerable quantity of superphosphate was released from Belgium to the Netherlands, so that, although the supply was not altogether sufficient, the result was better than at first had been expected.

During the first months of the War the export of potassium was not forbidden by Germany, which possessed the monopoly; but supplies were inadequate, owing to difficulties of transportation. In consequence of the export prohibition later promulgated by Germany, it became evident that the quantities of this fertilizer would be wholly insufficient to meet the very considerable spring requirements; but this danger, also, was averted because the German Government allowed exports of most generous amounts of patent potash and 20 per cent potassium nitrate to the Netherlands, though even this scarcely met the complete need.

3. *Measures Regarding Wheat and Rye.*

In September, 1914, the Minister of Agriculture, Industry, and Commerce fixed the maximum prices of wheat at twelve guilders per 100 kilos, and of rye at ten guilders for the same quantity, these being raised on September 30 to twelve and one-half guilders and eleven guilders respectively. On October 5, the burgomasters of the Province of Groningen were instructed to purchase all available stocks of rye and wheat in their communes at a price which was to be no higher than twenty-five Netherlands cents per 100 kilos below the maximum price. On October 17, trade in wheat in the Province of Groningen was decontrolled; and on November 28, the Minister decided to lower the maximum price of domestic wheat. On October 20, the burgomasters of the communes outside the Province of Groningen were also instructed to purchase for the account of their communes all the available stock of rye at forty cents per 100 kilos below the maximum price. No rye might be left to the farmers for fodder, except that which was unfit for human consumption. In order to obtain as much coöperation as possible between the various burgomasters in their provinces, the most of the Commissioners instituted Rye Commissions. On November 21, the Minister of Agriculture suggested to the burgomasters that they should promote the mixing of broken rye with wheat flour in the preparation of rye bread, and on January 19, 1915, it was forbidden to bake rye bread other than that which contained up to 50 per cent of wheat flour. This prohibition was revoked on April 15, 1915, as the existing quantity of rye seemed to be adequate for the requirements until the next harvest. After May 1, the rye commandeered by the Government was supplied by the Rye Commissions to the communes at nine guilders per 100 kilos.

4. *Regulations Regarding Exports.*

Exportation of a very large number of products of agricultural importance was forbidden; but since prohibition proved insufficient in many cases, it became necessary to issue regulations permitting the export of limited quantities of various products. These rulings will be set forth briefly here.

Potatoes.

The export of potatoes was prohibited under a Royal Decree of October 15, 1914, which came into force immediately. Meanwhile an investigation was made regarding potatoes which had been sold by contract before the prohibition, the result being that their exportation was permitted. It then became possible to obtain export licenses for such potatoes as were not adapted for home consumption, three commissions being instituted for the issuing of permits, *viz.*, one for Friesland, one for Groningen, Drenthe, and Overijssel, and one for Zeeland. After March 1, the export of potatoes was prohibited altogether. A subsequent investigation concerning quantities available in the Netherlands showed that it was still desirable to export a limited amount, especially of those grades which, not adapted to storage, would otherwise deteriorate. On April 1, a Government Central Bureau was established to regulate such exports, and this arrangement allowed 14,000,000 kilos to be shipped abroad in April and May. Both in the Netherlands and in Germany, stocks proved too large for the requirements; this necessitated the manufacture of potato-flour, in order to utilize the stocks of potatoes.

Butter and Cheese.

By a Royal Decree of October 26, 1914 (*Staatsblad* No. 508), the export of cheese was prohibited, as was that of butter by another Royal Decree of October 29 (*Staatsblad* No. 510). Those interested in the dairy industry and in the butter and cheese trade were consulted as to the best way in which a limited export might be permitted in such a manner that the quantity required for domestic consumption should be kept in the country, that the inflation of prices should be prevented, and that the export trade should not be interfered with more than was absolutely necessary. As a result of these deliberations a Central Bureau was established for the export of butter, and another for that of cheese.

The arrangement with regard to butter consisted chiefly of the following rules: (1) only butter covered by permits might be exported; (2) export permits might be obtained for a part of the output of controlled butter, the Government Central Bureau fixing the weekly percentage of the output for which such licenses might be granted; (3) butter destined for home consumption should be obtainable at maximum prices fixed by the Government.

The regulation of the restricted export of cheese was based on the following principles: (1) cheese might be exported only under permits issued by the Government Central Bureau for Cheese Export; (2) these permits should be granted only to those who would undertake to keep on hand a quantity of cheese proper for home consumption equal to 20 per cent of the total stock at the time of the inventory made under the instructions of the Minister of Agriculture, Industry, and Commerce; and (3) out of this quantity kept in stock, cheese might be sold as indicated by the Bureau at maximum prices fixed by the Minister, stocks to be replenishable after such sale.

Legumes.

The export of legumes was forbidden by a Royal Decree of August 3 (*Staatsblad* No. 372). This prohibition led to two difficulties. The first was in regard to the large quantity of peas and beans grown in the Netherlands for garden seed, these possessing a very high value, but unfit for general consumption. With a view to remedying this, the Union of Netherlands Seed Merchants was consulted, and an arrangement was reached whereby permits might be granted to dealers in garden seed for the export of peas and beans as seed for horticultural purposes. The second difficulty was in regard to two kinds of peas (marrowfat peas and imperial peas) which are cultivated in the Netherlands in large quantities, but are not eaten, so that the prohibition of exportation caused them to become more or less unsalable. Nevertheless, there was for a long time a reluctance to grant licenses, on the one hand, because it would thus be difficult to prevent the exportation of ordinary green peas, and, on the other hand, because in case of need (a possible cessation of grain imports) the marrowfat peas and imperial peas would have to be used in the Netherlands. In May, when this danger began to diminish at the approach of the new harvest, the export of green peas was permitted irrespective of variety, on condition that the exporter stored a quantity of green peas, or of maple peas, within the Amsterdam fortifications equal to at least one-third of the quantity of peas for which export permits were granted. The exporters who applied for permits furthermore undertook to supply to the Government at a fixed price the quantities in store at any moment.

Linseed.

The export prohibition of linseed promulgated under Royal Decree of September 24, 1914 (*Staatsblad* No. 361), gave rise to difficulties similar to those in regard to legumes. Although the Netherlands grows much less linseed than is necessary for her linseed oil and linseed cake factories, a large part of the crop cultivated in the Netherlands is exported because it is in great demand for seed purposes abroad. Under a special arrangement export, permits for these seeds were made possible.

Cattle and Meat.

The Netherlands are obliged to export cattle and meat, so that an absolute prohibition was not possible; but in the interest of the home consumer, it became necessary to place certain restrictions on these exports. In the first place, under a Royal Decree of November 14 (*Staatsblad* No. 531), exports of (a) fresh, salted, dried, and smoked bacon, and of (b) tried and untried pork and beef grease, as well as mixtures of these fats, with each other and with other fats, were prohibited.

On December 23, 1914 (*Staatsblad* No. 613), the export of live cattle and pigs was prohibited; the export of live sheep was later forbidden under a Royal Decree of March 4, 1915 (*Staatsblad* No. 123).

Horses.

Under a Royal Decree of August 1, 1914 (*Staatsblad* No. 335), the export of horses, with the exception of colts, was prohibited. In view of the considerable shipments of horses of one and one-half years which generally take place in the autumn, the export of geldings under twenty months old who had not yet shed was permitted under a Royal Decree of October 24 (*Staatsblad* No. 506). This was revoked by a Royal Decree of January 6, 1915 (*Staatsblad* No. 6), and the export of all horses was prohibited.

Hay and Straw.

The export of hay and straw had been forbidden by a Royal Decree of August 1, 1914. In the spring of 1915, export permits were granted for a considerable quantity of hay. After the issue of such licenses for several consignments of straw, the coöperative cardboard factories intimated that they feared a shortage of raw material. In consequence of this a commission was formed from the various groups concerned in the straw trade, for the purpose of regulating this matter. After investigating the available stocks and the requirements of the cardboard factories, an arrangement was made whereby export permits for straw could be obtained on condition that a quantity equal to two-thirds of the quantity to be shipped abroad should be placed at the disposal of the establishments in question.

Kohlrabi and Horse Carrots.

By a Royal Decree of February 24, 1915 (*Staatsblad* No. 117), the export of fodder beets, mangelwurzel, turnips, kohlrabi, and horse carrots was prohibited. The quantities of kohlrabi and of horse carrots, however, soon proved much too large for home consumption. With a view to remedying this oversupply, export permits were at first granted, but the prohibition was later abolished altogether.

Sugar.

Exports of sugar were forbidden under a Royal Decree of September 7, 1914 (*Staatsblad* No. 395). Since the quantity of beet sugar produced in the Netherlands is far too great for home consumption, it was arranged that 40 per cent of the coming harvest should be reserved for home use, the export of 60 per cent being allowed: 18 per cent might be raw, or refined if so desired, while 42 per cent had to be refined. The latter percentage was fixed particularly with a view to reserving as much raw sugar as possible for the refineries, thus preventing unemployment. In June, when the quantity of sugar fixed for home consumption proved insufficient to last until the new crop, the quantity to be exported was further restricted. Maximum prices were fixed for home consumption both for the wholesale and for the retail trade.

Potato-Flour.

The export of potato-flour was prohibited under a Royal Decree of February 27, 1915 (*Staatsblad* No. 118). As only a small part of the Netherlands output is needed for home consumption, an arrangement was made under which export permits could be obtained for the remainder.

Wool.

The export of raw and washed wool, sheep fleeces, and woolen yarn was prohibited by a Royal Decree of October 9, 1914 (*Staatsblad* No. 427). In May, 1915, the Minister of War commandeered all wool produced in the Netherlands under Article 32 of the Act of September 14, 1866 (*Staatsblad* No. 138), regulating billeting and maintenance of troops, as well as transportation and supply for the Royal armies or fortifications.

THE YEAR 1915-1916

1. *Provision for Artificial Fertilizers.*

In the beginning of June, 1915, a special Commission was formed to provide and distribute artificial fertilizers. In order to be able to import sufficient quantities, the Commission was obliged to give valid guarantees that they were needed for agricultural purposes in the Netherlands and that the farmers would actually use them on their land, the requisite assurance in these regards being obtained by the use of contracts and order blanks. Under these contracts, the farmers bound themselves to take no more artificial fertilizers than were required for the normal cultivation of their land, not to transfer the quantities supplied them, to pay in advance, and to give security or a banker's guarantee to insure the execution of their engagements. On the order blanks, which were colored differently for the various kinds of fertilizers, the required quantity, as well as the number of hectares of arable land and grassland cultivated by the applicant, had to be indicated. The Artificial Fertilizers Commission received the contracts directly from the farmers; the order blanks, however, came through the ordinary suppliers, who had to endorse the statements there made. These dealers, moreover, acted as middlemen for the distribution of the fertilizers, and for this they received compensation fixed by the Commission. When the dealer sent in the order blank, he added a declaration to the effect that he would ensure proper distribution, that there would be no juggling with the quantities supplied, and that he would see that only the applicant received the fertilizers. Infringements were penalized.

The farmers ordered the following quantities of artificial fertilizers on the blanks distributed by the Artificial Fertilizers Commission:

	Delivery		
	Autumn, 1915 tons	*Spring, 1916 tons*	*Total tons*
Chilian saltpeter	8,503	56,584	65,087
Sulphuric ammonia	7,824	13,621	21,445
Ammoniac superphosphate	751	13,501	14,252
Superphosphate (base 14 per cent)	35,147	61,335	96,482
Kainite	43,610	15,425	59,035
Potassium nitrate (20 per cent)	27,340	7,458	34,798
Potassium nitrate (40 per cent)	20,190	4,218	24,408
Patent potash	14,368	18,049	32,417

Of the 68,000 tons of Chilian saltpeter purchased by the Artificial Fertilizers Commission, the first cargo of 8,900 tons arrived at Rotterdam on December 15, 1915. This quantity, therefore, was sufficient for the autumn orders. Of the spring orders, 90 per cent were delivered, though, generally speaking, they came too late because of insufficient shipping space, the closing of the Panama Canal, and delay in the Channel. The distribution was carried out at the following prices: 17.80 guilders per 100 kilos for the autumn orders and the first half of the spring orders, and 18.30 guilders per 100 kilos for the second half of the spring orders, both plus commission for the trade and the freight from the port of arrival. As to sulphuric ammoniac, autumn deliveries were completed. This was imported neither from Germany nor from Belgium, and after February it was impossible to obtain export permits from England, so that only 55 per cent of the spring orders could be filled. The price at which deliveries were made remained unaltered at 20.65 guilders per 100 kilos, plus freight from the seaport or the factory and commission for the trade.

The distribution of ammonia superphosphate began toward the end of October, the price being fixed at 12.10 guilders per 100 kilos, plus commission for the trade and freight.

The superphosphate was almost entirely ordered from Netherlands factories, though their operation was greatly retarded because of a lack of sulphuric acid, which was manufactured by only one of the six factories, the others importing it from Belgium and now experiencing many difficulties in this regard. The autumn deliveries of superphosphate were made in full, though only 40 per cent of the spring orders could be filled for those applicants who had not received anything by February 15, 1916. The price remained fixed at five guilders per 100 kilos, plus commission for the trade and freight from the factory.

The supply of potassium fertilizer was fairly adequate, although only patent potassium of 25 per cent and 20 per cent potassium salt were received. The quantity of these products to be delivered in lieu of the kainite of 40 per cent potassium salt which was ordered at the same time, was based upon the amount of pure potassium contained in the various fertilizers. For the harvest of 1915-1916, about 62,444 tons of patent potassium and 53,047 tons of 20 per cent potassium salt were delivered. The prices for patent potassium and 20 per cent potassium salt respectively were at first 589 guilders and 264 guilders per 10,000 kilos f.o.b. Stassfurt; but after the middle of December they rose to 646 guilders and 298 guilders, and after May 1, 1916, to 706 guilders and 346 guilders.

2. *Provision for Fodder.*

During 1915, about 30,000 tons of maize were at first imported monthly on behalf of the Government; acquisition of what was required over and above this was left to the trade, while some of the guarantees granted by the Netherlands Overseas Trust were sufficient to allow transportation to the Netherlands to be effected without hindrance. In the second half of October, however, there was a change because the quantity of maize which might be imported into the Netherlands was fixed at 450,000 tons for the period between October 1, 1915, and March 31, 1916. Owing to irregular arrivals in October and anxiety about further obstacles, prices rose, so that in December the Government was compelled to commandeer all incoming maize and to take over distribution. This was rendered the more necessary as it appeared likely that the monthly quantity of 75,000 tons would not cover the requirements, and the Government desired that a just distribution should be made. On December 20, therefore, the Netherlands Overseas Trust was requested to grant no more permits for imports of maize and rye without the consent of the Government, which would grant such licenses only in case the grain in question was sold to the Government. Maize for which the Netherlands Overseas Trust had already granted permits, but which had not yet arrived, could be sold to the Government. In this way several consignments passed into government possession, the rest being expropriated on January 20.

From October 1, 1915, to March 31, 1916, the total imports of maize and rye amounted to more than 425,000 tons. After April 1, the Government purchased maize and rye on the basis of 75,000 tons monthly. The quantities of rye and barley imported regularly by the Government were very limited and were mainly used for industrial purposes (in factories for rye flour and in distilleries). Up to January 1, 1916, the Grain Bureau had delivered altogether 398,758,986 kilos of maize, 31,500,300 kilos of rye, 19,257,678 kilos of barley, and 2,233,172 kilos of linseed cakes.

3. *Measures Regarding Wheat and Rye.*

No restrictions were placed on trading in the wheat of the 1915 harvest, though the Government declared itself prepared to purchase sound home-grown wheat of the new harvest weighing at least seventy-five kilos per hectoliter. The price per "load" (2 tons) of 2,400 kilos was fixed as follows: in September, 300 guilders; in October, 290 guilders; and in November and December, 300 guilders, a total of 300,630,000 kilos being sold during these months.

At first the Government was of opinion that the trade in rye of the 1915 harvest should be unrestricted; and this was the basis of the ministerial circulars of July 3, 1915, which invited the coöperation of agricultural societies, grain merchants, and municipal councils so that sufficient rye might at reasonable prices remain available for bread. Shortly before the harvest and at its beginning, there were phenomena in the rye trade, as well as reports about it, which caused the Government to take another point of view. The burgomasters of the communes where rye was grown were requested by a circular dated August 9, 1915, to make an agreement with the farmers whereby they would undertake to deliver to the Government a maximum of three-fifths of the rye grown by them, in proportion as it should be required for providing rye bread for the commune. To facilitate this agreement the Government provided maize which could be exchanged for rye in such a way that though the exchange might not be entirely advantageous, at any rate there would be no loss to the growers of rye. The municipal councils concerned, however, were free to adopt or to reject these measures; but if they took the latter course, the possibility of subsequent government assistance in providing bread was precluded. Furthermore, it was necessary to make provision for the comparatively small shortage in those communes where more than three-fifths of the rye grown was used in baking rye bread. It was presumed that this deficit could be overcome by purchasing rye from such regions as ordinarily marketed almost the entire harvest, as well as from places where the farmers were not in the habit of selling rye but might be persuaded to part with their surplus at eight guilders. The Government accordingly purchased rye from these sources at eight guilders per hectoliter of 70 kilos, and it was placed at the disposal of the communes concerned. If the sale of rye to the distilleries was now checked, it was supposed that only the Government would be a purchaser, because bakers would be able to obtain rye from the Government at 6.30 guilders and because maize would be cheaper for the buyers of fodder. At the beginning of the harvest, however, the price rose to 9.50 guilders per hectoliter, a condition which caused the Government to fix a maximum price of eight guilders for rye and to prohibit its sale outside the communes, unless it was destined for the Rye Bureau of the province. For the trade in seed-rye, an exception was made under special conditions.

4. *Regulations Regarding Exports.*

Butter.

The regulation of October, 1914, with regard to placing butter at the disposal of the Government was still in force at the beginning of 1915. Up to March 20, 40 per cent of the production was required thus to be made available for home consumption. The quantities actually so set aside were: from March 20 to July 11, 25 per cent; from July 11 to July 18, 30 per cent; from July 19 to August 15, 35 per cent; from August 15 to September 6, 45 per cent; from September 6 to September 13, 40 per cent; from September 13 to September 20, 45 per cent; from September 20 to October 3, 30 per cent; from October 3 to October 17, 40 per cent; and from October 17 to October 24, 50 per cent.

Under ministerial decree the Government Central Bureau for the export of butter was abolished as from October 24, 1915. In its place were established the Butter Union and the Government Commission to supervise it. At the time of organization, the quantity of butter placed at the disposal of the Government for home consumption was 50 per cent. This remained so until November 14, after which, up to December 5, it was 45 per cent of the output; from December 5 to December 12, 40 per cent; from December 12 to December 26, 35 per cent; and from December 26 to January 2, 40 per cent. During 1915, 17,726,648 kilos of butter were thus made available for home consumption.

Cheese.

During the opening months of 1915, the regulation adopted in October, 1914, for the export of cheese was still in force; but a drastic change was made by the ministerial decrees of April 22, 1915, which came into force on May 1. Permits had formerly been issued to those who bound themselves to keep on hand for home consumption 20 per cent of their stock at the time of the inventory taken by order of the Minister of Agriculture, Industry, and Commerce; to deliver cheese from this stock under instructions of the Government Central Bureau at the fixed maximum price; and to replenish their stocks. The new regulation, on the other hand, was made with a view to keeping in the country a fixed percentage of the cheese purchased and produced. For the four northern provinces, this proportion was 15 per cent (10 per cent for the Edam cheese of North Holland), and for the other provinces, 20 per cent; on August 9, the percentages for the latter were fixed at 15 and 30 per cent respectively. The exporters were required to deliver this cheese at or lower than the maximum price for home consumption. On October 18, the percentage of cheese to be placed at the Government's disposal for home consumption was raised to 40 per cent for all kinds, except Leyden and Delft cumin cheese.

The Government Central Bureau for the export of cheese was abolished on October 24; all permits held by interested parties had to be handed in to be replaced by others later on; and the Bureau was succeeded by the Cheese Union and the Government Commission to supervise it. Pending a new ruling on distribution and export, which was to be framed by the Commission of Supervision and the Cheese Union in concert, the whole export of cheese was temporarily suspended after October 23. It was not until December 7 that the regulations had reached a point which permitted a resumption of exportation: 40 per cent of the purchase or export of all varieties of cheese, with the exception of Leyden and Delft cumin cheese, were to remain at the disposal of the Government for home consumption; and after January 1, 1916, the percentage of all cheese was fixed at half that proportion. Under the new regulations, central warehouses were established, to which the cheese reserved for home consumption was transported and from which it was delivered to the wholesale merchants. For each warehouse, a Warehouse-Master and a Commission of Supervision were appointed. In November, 1915, a declaration was required from all exporters of cheese by which they bound themselves to purchase no cheese made of milk from establishments which in previous years had sold milk for home use after November 1.

Milk.

With regard to the provision of milk for domestic consumption during the winter of 1915-1916, a regulation was passed on October 28 based upon the following principles: (1) those who had supplied definite communes with milk during the winter months of previous years were obliged to continue to do so; (2) the producer must receive for such milk the winter price of 1914-1915, plus the higher cost of production, this being at most two Netherlands cents per liter; (3) if necessary, the Union of Factories of Dairy Products was required to make temporary provision to obviate a shortage of milk in any commune at a maximum price of production fixed for that commune.

The execution of the engagement mentioned under (1) could be furthered, in case of need, by various measures. In connection with the principle embodied in (2), it may be remarked that in view of divergent local circumstances, it would be difficult to fix a maximum milk price for the whole country; but such prices for production and sale were set in various communes under authorization by the Minister and with due regard to the principle in question.

The Union of Factories of Dairy Products, which was established on September 28, 1915, aimed at regulating exports of milk and dairy products, besides controlling the quantities to be placed at the disposal of the authorities under principle (3). Butter and cheese, however, were excepted in so far as their exportation was in accordance with ministerial decrees. By such an ordinance of October 16, a Government Commission of Supervision was established for these two products. To promote the success of the regulations for the provision of milk, commissions were established in various provinces. During the fourth quarter of 1915, the factories delivered 1,400,000 liters of milk for consumption.

Eggs.

By a ministerial decree dated October 14, 1915, the execution of the measures adopted in connection with the export prohibition was handed over to the Egg Union and its Government Commission of Supervision. For each export permit issued, a certain quantity of eggs for home consumption had to be placed at the disposal of the authorities. Of the fresh eggs, part was distributed for direct consumption; another part was delivered for preserving, and the remainder was sold at auction for domestic use. The percentage of the latter was fixed every week, as was the price of the two former categories. Under those regulations, 17,731,251 fresh and 8,687,280 preserved hens' eggs were exported from October 17 to December 31, 1915, inclusive; 3,471,729 fresh and 387,837 preserved hens' eggs, as well as 133,710 preserved ducks' eggs, were placed at the disposal of the authorities for home consumption.

Meat.

Under a Royal Decree of February 20, 1915 (*Staatsblad* No. 58), all European countries were considered as areas to which the export of government inspected meat was prohibited, and the Government thus brought the entire export of meat under their own control, such a measure being necessary so as to be able to determine further restrictions on exportation. This followed soon enough, the Royal Decree of February 18, prohibiting exports of pork, being promulgated on March 17, 1915. In order not to alarm the breeders and fatteners and to promote the carrying on of their trade which was necessary in the public interest, it was declared officially upon the publication of the export prohibition that the intention was to adopt such measures as would permit a limited export. In this connection, a Government Central Bureau for regulating the sale of pigs and of pork was established under a ministerial decree of March 17. After April 19, this Bureau issued licenses for export on condition that for each consignment the shipper should place at the disposal of the authorities for home consumption a certain weight of live pigs at a price to be fixed by the Minister. The distribution was effected for the most part through the Netherlands Butchers Union. From July 26 to August 9, the distribution ceased for a time as prices abroad were too low to allow of profitable exports, coupled with the obligation of providing for home consumption. In September, the delivery of pigs was extended to the smaller centers of consumption, the distribution being effected henceforth, as a rule, by the burgomasters.

In connection with the new organization for placing foodstuffs at the disposal of the authorities, the Central Bureau was abolished on October 24, 1915, and its functions were transferred to the Pork Union and the Government Commission for its supervision. Henceforth, distribution was effected through the burgomasters. From August 19 to September 27, no permits were issued for the export of pork, except for such quantities as were then in stock or in course of preparation with the exporters.

Under a ministerial decree dated October 28, 1915, regulations were made regarding exportation of beef and mutton. Exporters were thus enabled to obtain permits for shipping certain quantities of these kinds of meat, while they bound themselves to provide a certain weight percentage of pork for home consumption at a price to be fixed by the Minister. The decree dated November 25, 1915, with similar conditions, allowed the export of offal of pigs, cattle, and sheep slaughtered for export. The weight percentage of the exported quantities which had to be provided for home consumption was fixed monthly. In 1915, it varied for pork between 50 and 200; for sausage between 60 and 100; for beef, 75; for mutton, at first 100 and afterwards 50. The Government paid eighty Netherlands cents per kilo for pigs of 100 kilos slaughtered weight, this price being lowered to seventy cents after December 27, 1915.

Cattle.

Although some licenses had already been granted for the export of breeding cattle, a decree of August 23, 1915, sanctioned the weekly export, after Monday, September 13, 1915, of live cattle by water *via* Amsterdam and Rotterdam, or by rail *via* Nieuwe Schans, Oldenzaal, Winterswijk, Zevenaar, Venlo, Roermond, and Roosendaal. These exports referred only to: (a) herd-book cattle of all ages, and (b) cows obviously in calf, but with permanent dentition, their teeth showing a grinding surface. Furthermore, the cattle to be exported had to be submitted to a veterinary examination immediately before shipment. By a ministerial decree of September 27, 1915, regulation (b) was altered so as to permit exporters to consign to Spain not only herd-book cattle of all ages, but also cows of any age obviously in calf, or which had lately calved. The decree permitting the exportation of live cattle was repealed, however, by another of November 23, 1915. During the months of September, October, and November respectively, a total of 3,222, 5,066, and 8,565 breeding cattle was exported.

Horses.

A ministerial decree of August 25, 1915, provided that for some time after August 30 it would be possible to export stallions and geldings less than twenty months old. This was canceled after September 30, but was again permitted from November 10 until the end of December by a decree of November 6; and licenses were also granted for the export of rejected stallions.

Potatoes.

During the summer of 1915, the export of early potatoes was allowed as in ordinary years, because the crop is far in excess of home requirements and potatoes do not keep well. When the season of the early potatoes neared its end, and late potatoes were harvested unripe here and there so as to export them as early potatoes, the export was stopped, and no permit was granted until about the middle of February, 1916. The aspect of the crop justified the belief that no potatoes would be available for export when the normal quantity had been ground by the potato-flour factories. To prevent factory-potato growers, who had not joined the coöperative factories, from being duped by this arrangement and having to accept any price offered by the potato-flour factories, the latter bound themselves not to pay less than 8.50 guilders per hectoliter of 61 kilos for the potatoes which they purchased.

The potato harvest, however, proved better than had been expected, so that large quantities remained in stock in various regions during the latter part of the winter, and it was clear that they could not be sold in the Netherlands. Since all had had sufficient opportunity to purchase potatoes at reasonable prices, it was decided, after taking an inventory, to permit a systematic exportation. This was the more necessary because, if the frontiers were kept closed, the cultivation of potatoes would be diminished considerably. In May and June, owing to a combination of circumstances which could not have been foreseen, difficulty arose in providing potatoes for home consumption, though this situation would hardly have been worse if exportation had been entirely forbidden, because in that case the potatoes would doubtless have been used in large quantities as fodder.

Legumes.

The export of legumes was allowed if a certain quantity was placed at the disposal of the authorities for home consumption in lieu of the consignments for shipment abroad, primarily of Windsor beans, marrowfat peas, horse beans, and imperial peas. Thus 12,000,000 kilos of brown beans, 600,000 kilos of white beans, 9,800,000 kilos of small green peas, 450,000 kilos of maple peas and dun peas, and 280,000 kilos of vetches from the 1915 harvest were placed at the disposal of the authorities for domestic use. In accordance with the regulation made for the purpose, dealers in seed were allowed to export peas and beans destined for horticulture.

Linseed.

This year, also, saw an arrangement made for the export of domestic linseed for sowing purposes.

Vegetables.

Under an arrangement reached in August, large quantities of vegetables could be supplied for home consumption at reduced prices through the secretary of the Netherlands Horticultural Council, who had received the necessary authorization from the Minister of Agriculture. This secretary immediately took measures to set aside a certain quantity of vegetables for preserving and distribution as government preserved vegetables. Under the new regulations for placing foodstuffs at the disposal of the authorities, the duty of supplying vegetables was put in the hands of the Central Vegetables Union and its Government Committee of Supervision.

The total quantities placed at the disposal of the authorities were the following: 2,546,286 kilos of carrots; 4,312,256 kilos of onions; 2,066,029 kilos of turnips; 147,766 kilos of beetroots; 2,925,541 kilos of yellow cabbage, 3,418,982 kilos of red cabbage; 4,652,434 kilos of white and Danish white cabbage; 509,247 kilos of scarlet runners; 593,813 kilos of French beans; 286,000 kilos of endive; and 1,806,007 kilos of preserved vegetables in casks, making a grand total of 23,264,361 kilos.

Hay and Straw.

In connection with the grazing period, the export of a considerable amount of hay of second and third quality was allowed in May. Up to August 1, export permits were also granted for limited quantities of straw.

Potato-Flour.

The Union of Potato-Flour Factories made arrangements so that sufficient quantities should remain available for domestic consumption; and of the 1,400,000 bags of 100 kilos each which the crop yielded, about 25 per cent were reserved for home use. As the price for superior flour in the domestic market had not increased very considerably, it was at first left unrestricted, but in the spring of 1916 it was fixed at twenty-six guilders per 100 kilos, in connection with the rise which then took place. The Government Commission for the supervision of this union also made a regulation under which the glucose factories were enabled to obtain second-grade flour at a maximum price of nineteen guilders per 100 kilos.

Sugar.

Under an agreement with the beet sugar factories, 50 per cent of the output of raw sugar of the 1915-1916 crop was reserved for home consumption.

Chicory.

By a ministerial decree of October 16, 1915, for each 35 kilos of dry chicory roots for which export permits were granted, 65 kilos, at a maximum price of sixteen guilders per 100 kilos, were required to be supplied, or had to be kept available until March 1, for delivery to a Netherlands chicory factory. Later, this date was successively prolonged to May 1 and October 1, 1916.

THE YEAR 1916-1917

1. *Provision for Artificial Fertilizers.*

The task of providing for artificial fertilizers was again placed in the hands of the Artificial Fertilizers Commission.

The supply of potassium fertilizer was fairly satisfactory. Since regular arrivals of 20 per cent potassium salt might be expected between May 15 and August 1, after which its import would probably be attended with increased difficulty, order forms for this fertilizer could be sent in after May 1. The delivery of patent potassium took place in the autumn, and a quantity of 20 per cent potassium salt was also delivered at that time. The price for 20 per cent potassium salt was 3.46 guilders, and for patent potassium 7.06 guilders per 100 kilos f.o.b. Stassfurt if loaded in bulk and forwarded direct to the consumers.

The providing of superphosphate, ammoniac, sulphuric acid ammoniac, and Chilian saltpeter gave rise to greater difficulties, since orders for these fertilizers formed a single whole. Every farmer received a series of four order forms, all of which bore the same number; and the series themselves were numbered consecutively, this being necessary because application had to be made for all four fertilizers to a single union or dealer before August 12. The suppliers were allowed to sell only to those customers who had ordered from them the previous year. The separate autumn and spring orders were canceled, but this could not give rise to difficulty since they were delivered in instalments, so that they were distributed over the autumn and spring. No consumer could apply for larger quantities of fertilizers than he had used during the previous year. Though this ruling placed those who had bought during the preceding year in a somewhat privileged position in so far as they had lived up to the regulations, nevertheless injustice was prevented by imposing special conditions for exceptional cases. Under any other arrangement, however, the reverse would have been the case, especially as it was already obvious that the available quantities of phosphoric acid and nitrogenous fertilizers would not be sufficient to meet the applications. Farmers who, owing to special circumstances, had ordered little or nothing during the previous year were enabled to receive a larger quantity if they applied for it to the Artificial Fertilizers Commission and produced documentary evidence. In order to reduce these cases to a minimum, a number of special rules were established. If, for example, more land was under cultivation, it must be proved that arable land was concerned; in the case of reclaimed land, it must be attested that considerable expense had been incurred for reclamation purposes as early as 1915, since the mere choice of other crops did not entitle applicants to more artificial fertilizer. Moreover, a third party had to examine and pass on such cases. The farmers were not obliged, as in the previous year, to submit contracts as well as order forms, but, instead, the initial dealer was required to provide a bank guarantee on behalf of the applicants.

The arrangement with regard to retail sales to applicants working less than two hectares of land was carried out in the same way as in 1915-1916, those persons who had then ordered on printed forms being allowed to do so now. In December, when the Artificial Fertilizers Commission had finished investigating the orders received, a number of applications had to be refused because they did not fulfil requirements, partly through ignorance and partly through carelessness. In so far, however, as the applicants were in a position to give the additional information and to make the corrections desired by the Commission, their applications were still recognized. Difficulties attending the importation of raw materials for the manufacture of sulphuric acid had caused such arrears in making superphosphate in the Netherlands, that the Artificial Fertilizers Commission was obliged to purchase two shipments of it in the United States. Owing to the difficulties of transport, moreover, some buyers had to promise to take their supplies earlier than others.

In October, the distribution of the superphosphate ordered began, the quantity being 15 per cent of the approved applications; for 14 per cent fertilizer, the price was eight guilders; and for 17 per cent, 9.70 guilders at the factory, the distribution ending on December 15. The second distribution began in December and amounted to 30 per cent of the total amount. Applicants in Zeeland, South Holland, North Holland, and Groningen were obliged to take this quantity before January 15, 1917; those in the provinces could ask for accelerated delivery, but in any case they were bound to receive it within a fixed period. In March, a third distribution of 10 per cent was made, so that a total of 55 per cent of the superphosphate ordered was actually delivered. Of the approved applications for ammoniac superphosphate (7 per cent nitrogen, 9 per cent phosphoric acid), 40 per cent was delivered about New Year at the price of eighteen guilders per 100 kilos at the factory, an additional 25 per cent being distributed in March at twenty-two guilders. The approved orders for vegetable fertilizer (5 per cent nitrogen, 6 per cent phosphoric acid, 8 per cent potassium) was delivered in two instalments of 50 per cent each.

Since importations of sulphuric ammoniac from England had long since ceased and only a limited stock was available, distribution of this fertilizer had to be restricted to such parts of the country as had at first received none of the second distribution of Chilian saltpeter, that is, western North Brabant, Zeeland, South Holland, North Holland, and Friesland. Of the total quantity, 40 per cent was supplied at thirty-seven guilders per 100 kilos at the gasworks of the warehouse. In other areas the applicants received first 10 per cent and then 30 per cent of Chilian saltpeter at twenty-five guilders per 100 kilos, instead of sulphuric ammoniac. Finally, another 25 per cent of Chilian saltpeter was distributed at thirty-five guilders per 100 kilos. The delivery of this saltpeter began in October to the extent of 10 per cent of the approved quantities, the price being twenty-five guilders per 100 kilos. In January, the second distribution commenced, the price being twenty-four guilders and the quantity 30 per cent. This apportionment concerned eastern North Brabant, Limburg, Utrecht, Gelderland, Overijssel, Drenthe, and Groningen; but it was not until June that it could be continued for the rest of the country. At the same moment the third distribution of 25 per cent was effected at thirty-five guilders per 100 kilos free alongside steamer. The subjoined figures show the quantity of artificial fertilizers ordered and delivered in 1916-1917.

	Total quantities	
	Approved orders (in tons)	*Deliveries (in tons)*
Chilian saltpeter	69,066	58,208*
Sulphuric acid ammoniac	23,761	3,618
Ammoniac superphosphate	17,705	11,508
Vegetable fertilizer	1,642	1,642
Superphosphate	95,559	54,980
Potassium salt (20 per cent)	214,042	214,042
Patent potassium	30,865	30,865

* Including deliveries to applicants for sulphuric ammoniac.

2. *Provision for Fodder.*

The difficulty of importing grain and other fodder increased during this year. In January, 1916, the Government took over the entire importation of maize, a highly important commodity; and, in the course of the month, it directed that certain quantities had to be sold at auction in Rotterdam and Amsterdam, the price varying from 215 to 235 guilders per 2,000 kilos. Increasingly strict measures were soon deemed necessary to achieve a more equitable distribution. For the month of February, the Government kept a certain quantity of La Plata maize at the price of 235 guilders per 2,000 kilos available for factories, farmers, and cattle breeders, who were required to submit their applications to the decision of the agents of the Government, *i.e.*, the Committee for the Grain Trade at Amsterdam and the Commission of Grain Merchants at Rotterdam.

Since this distribution gave rise to complaints from the coöperative purchasing unions, these two organizations were at their own request relieved of their work, and, by a ministerial decree of February 14, a special commission was now charged with this duty. This commission refused a considerable number of applications for March because they had not only been sent in too late but also were insufficiently filled out, and likewise because the quantity was deemed excessive in proportion to the normal requirements of the applicants in question. By the time of the April distribution, arrangements had been improved in various ways, and application forms properly filled out were demanded so that a closer supervision might be possible. Not only were applications, incorrectly filled out, declared canceled, but the applicant might also forfeit temporarily his right to order government maize. At the same time, the guarantee for a proper judgment of the applications was improved, since the applicant could demand a written review of his case from the commission, and the matter was then decided in plenary session. The distribution of the available quantity of maize for approved applications was effected proportionately. The supplies delivered to wholesale dealers, manufacturers of maize flour and maize cakes, and retailers were delivered on condition that the maize in question, and the products made thereof, would be sold at the price given for it to the Government, plus the freight actually paid, charges, and a reasonable profit. The government inspectors were required to exercise a strict control over the proper execution of the plan, and the burgomasters were also requested to coöperate. Up to the October distribution, government maize was taken care of in this way by the commission.

With regard to such fodder as foreign barley, oats, and linseed cakes, certain quantities could be imported during the first part of the year in addition to the restricted government imports if the requisite permits were issued by the Netherlands Overseas Trust. Only a very limited shipping space was available; but since the importers could make a large profit on the selling price, the rate of freight which they had to pay was a matter of secondary consideration. As these freights rose, it became more and more difficult for the Government to obtain shipping space at reasonable rates on behalf of its importers, so that the prices of fodder rose more than was necessary. From May 15, therefore, the Government took over the distribution of these commodities, and the owners of consignments which had already been shipped might transfer them to the Government Bureau for the Distribution of Grain and Flour. Pending a general rearrangement, the distribution of barley was organized separately in June, and the Government, during this month, also placed a consignment of American linseed cakes on the market. During July and August, a quantity of linseed cakes was distributed; and in September, a limited quantity of oats.

In view of the changed conditions, a new organization for the distribution of fodder was established by a Royal Decree of August 11, 1916. Whereas hitherto the distribution had been based upon the requirements of the dealers on behalf of their customers, it was now founded upon the quantities needed by the cattle breeders. A commission for the allotment of fodder was established as a central body on which sat a member to be elected from and by each fodder commission appointed by the Minister of Agriculture, Industry, and Commerce. These bureaus were established in places where the grain trade was centered, and they consisted of representatives of organizations of dealers, farmers, and millers. Thus seven fodder bureaus were created: at Groningen for Groningen and Drenthe; at Leeuwarden for Friesland; at Amsterdam for North Holland; at Zwolle for Overijssel and Gelderland; at Utrecht for Utrecht; at Rotterdam for South Holland, Zeeland, and North Brabant; and at Roermond for Limburg. The cattle breeders were required to hand in their orders for certain months, indicating the number of heads of cattle which had to be fed with the quantity ordered, to a single union or dealer who thereupon transmitted those orders on forms printed for the purpose to the fodder bureaus concerned; as far as quantities below twenty tons were involved, the orders were sent through recognized wholesale dealers. The fodder bureaus sent these forms after approval, and possible amendment, together with the required collection-tables, to the commission of allotment, who knew what quantities were on hand and what amounts could be distributed from each depot. This commission determined whether the fodder bureaus had obeyed regulations as to quantity, and it allotted to each bureau such a percentage that individual applicants might be treated as far as possible on an equal footing. The bureaus distributed the quantities assigned to them among the various applicants, who were informed by allotment tickets as to the distribution and the place of delivery. The Provincial Bread Commissions were charged with collecting, receiving, storing, and delivering home-grown grain; and for this purpose they availed themselves of the warehouses and services of domestic grain dealers. The commissions made the deliveries when paid on delivery orders issued by them, and simultaneously the allotment tickets were canceled. The receivers, in this case the wholesalers, or the unions and the dealers, delivered the consignments to those who were entitled to them. The wholesale dealers received a commission of two guilders per 2,000 kilos and the unions or the dealers were entitled to a profit of 25 Netherlands cents per 100 kilos, the actual expenses for freight, etc., being charged to the account of the applicants.

Maize, linseed cakes, and foreign grain were placed under the management of the Committee of Grain Merchants at Rotterdam and the Committee of the Grain Trade at Amsterdam. They were delivered to the importers for cash, the interested parties having concluded a contract with the Netherlands Overseas Trust. The importers made deliveries proportioned to the amounts allotted to their applicants at the price which they themselves had paid, plus a bonus; they looked after the Netherlands Overseas Trust guarantee, paid the middleman the commission of one guilder per 2,000 kilos, etc. Delivery by unions or dealers to applicants was made under the same conditions as were applied to domestic grain. When the Government subsequently took over other fodders of domestic origin, such as mixed fodder cakes and the by-products of flourmills, these government commodities could be divided into four groups, namely: (1) maize, wheat, and barley; (2) oats and beans; (3) linseed cakes, linseed flour, and composite cake; (4) waste products (bran, grits, etc.). The percentage of each group could be different but was always equal for everything in a given group. During 1916, the Government Bureau for the Distribution of Grain and Flour delivered the following total quantities: 642,761,916 kilos of maize, 66,457,871 of barley, 26,690,878 of oats, and 67,119,555 of linseed cakes.

Since the prices of maize rose higher than was desirable and government distribution appeared necessary, the following maximum prices were fixed after March 24, 1916, for all sales of maize, both wholesale and retail: for La Plata maize, 280 guilders; and for mixed and Indian maize, 290 guilders free at the seller's warehouse; for maize flour, ten guilders more. In July, these prices were raised by ten guilders. After October 15, the maximum retail prices, under Article 8 of the Distribution Act of 1916, were as follows: La Plata, mixed, and Indian maize, 15.50 guilders per 100 kilos (16 guilders if ground), free at the seller's warehouse. The maximum prices, however, could not be regarded, under penalty of exclusion from later allotments, as those which might be charged in all circumstances, since there might be cases in which a reasonable profit was possible even at a lower price. As early as January, 1916, the Netherlands Overseas Trust had fixed maximum prices for linseed cakes and cocoa cakes imported under its supervision; and in August, it extended its activities to fodders made in the Netherlands from raw materials imported from overseas.

3. *Measures Regarding the Harvest of 1916.*

Grain.

The regulations of 1915 regarding the rye harvest, under which only three-fifths of domestic rye were compulsorily placed at the disposal of the authorities for providing rye bread in their communes, were subject to two objections. In the first place, the farmers kept the best grades for themselves and delivered only the inferior qualities. In the second place, in a commune which cultivated much rye and consumed little, the farmers were in a better position than those living in places where the reverse was the case. To remove these objections, the decision was reached, in June, 1916, that the Government should purchase the entire rye harvest at the rate of thirteen guilders per 100 kilos, this price being fixed in accordance with the price then holding good for maize. In the contracts presented to them for the purchase of rye, the farmers could also state whether they wished to receive in return maize or rye, or both, and also how much of this they desired in the form of fodder. Further difficulties with regard to the feeding of cattle made it necessary to buy other grains as well. By the end of July, the burgomasters were instructed to purchase wheat, barley, and oats on behalf of the Government at the following prices: wheat, fifteen guilders per 100 kilos at a natural weight up to and including 75 kilos, and 15.25 over that weight; barley, fourteen guilders per 100 kilos; and oats, thirteen guilders per 100 kilos.

These prices were fixed in such a way that they stood in the same relation to the mean prices of 1911-1913 as was the case with rye. The Provincial Bread Commissions (the name given to the former Rye Commissions) were charged with collecting, receiving, paying for, storing, and delivering these grains.

Legumes.

The entire new harvest of legumes was purchased by the Government. For the time being (up to and including November 15) green peas, maple peas, dun peas, and brown and white wild beans of the 1916 harvest fit for human consumption might be offered to the Director of the Government Central Administration Office for the Distribution of Foodstuffs, with the statement of the price free railway station, and the date of delivery. Offers of fodder peas could also be made there. Under a ministerial decree of November 14, the delivery and transportation of all sorts of green peas and brown beans were prohibited.

By the end of November, the Legumes Union was put in charge of the purchase of green peas and brown beans (cleaned by machinery and boiling well) required for the distribution of the 1916 harvest at thirty-five guilders per 100 kilos, this price being fixed as the maximum under Article 3 of the Distribution Act of 1916; and the offers noted in the preceding paragraph were also transferred to this union. On March 15, all peas and brown beans were commandeered, the category just mentioned at the price already recorded, and peas unfit for human consumption at their estimated value. After this latter date, three Netherlands cents per 100 kilos per week was allowed for storage. The harvest of broad beans, sheep beans, horse beans, vetches, and various others (with the exception of white-germed green or black beans) was commandeered in November at seventeen guilders per 100 kilos through the agency of the Provincial Bread Commissions and was included in the distribution of fodder. After December 1, five Netherlands cents per hectoliter above this price was allowed to the farmers weekly for storage, and they were permitted to keep a certain quantity of beans for their own use and for sowing. Early in February, the use of legumes for fodder was prohibited with the exception of horse beans and sheep beans for horses and of vetches for pigeons.

Potatoes.

During the summer, the potato-flour factories had been allowed temporarily to mill 8,200,000 hectoliters, but the prospect of a bad harvest led, on September 13, to a prohibition on the milling of potatoes with yellow cores. Since this interdiction caused difficulties in the case of consignments subject to rapid deterioration, an inspection was made and permission was given to mill potatoes unfit for human consumption. Subsequently, the milling of potatoes with white cores was also forbidden. In view of the small harvest, the Government hoped to effect a great saving in the consumption of clay-grown potatoes by making factory potatoes available, at first with yellow and then with white cores. For this purpose, five purchase contracts were concluded with the union of exporters of potatoes grown in the moors. The first contract was for 5,000 wagons of potatoes with yellow cores, to be delivered at 515 guilders per wagon of 10,000 kilos (including freight to destination), on condition that the growers should receive at least three guilders per hectoliter (70 kilos); the second was for 7,000 wagons of potatoes partly with yellow and partly with white cores, at 530 guilders per wagon; the third was for 1,700 wagons at 615 guilders per wagon, to be stored in pits in order to provide the large cities with potatoes in case of frost; the fourth was for 5,000 wagons, and the fifth for 3,000; and the union supplied in all some 20,400 wagons of potatoes grown in sand and in the moors. The government supply of the latter was assisted by the prohibition of transporting, except to the storehouses of the growers, the following varieties of potatoes grown on clay soil: Bravo, Black-and-Blue, Red Star, Frisia, De Wet, and Industry; and a ministerial decree of October 28 extended this interdiction to clay-grown potatoes of all kinds, thus including Eigenheimers and Borgers.

After December 5, the delivery and transport of clay-grown potatoes were allowed within the limits of the commune where they then were. On that same day, an inventory was taken under Article 9, Paragraph 1, of the Distribution Act of 1916, and the transportation of all potatoes outside the limits of the commune was prohibited after January 30, the stocks being commandeered. For potatoes grown in sand and moor in Groningen, Friesland, and Drenthe, the growers received 3.60 guilders per hectoliter (70 kilos), and 4.20 guilders for those from other provinces. By a ministerial decree of February 22, 1917, distribution regulations were made whereby the Government Central Administration Office for the Distribution of Provisions directed the Potato Union to distribute potatoes in the following order: (1) potatoes grown in sand and moor: (2) clay-grown Eigenheimers, Borgers, and Industries; (3) all other varieties of clay-grown potatoes. In Friesland, Zeeland, and on the South Holland islands, the varieties mentioned under (2) could be supplied at once to the army so far as they were in stock. The total deliveries amounted to 7,362 wagons of clay-grown potatoes as well as 644 of sand-grown potatoes from the southern part of the country, mainly from Limburg. The following prices were paid for clay-grown potatoes: five guilders for Eigenheimers, Borgers, and Industries; six guilders for Red Star; and six and one-half guilders for the better grades. The dealers, who acted as middlemen for the purchase, received upon delivery in the centers of cultivation twenty guilders per wagon for loading, twenty guilders for freight, and twenty-five guilders for commission, so that Eigenheimers, etc., cost 780 guilders per wagon delivered at destination, and other varieties in proportion. For moor-grown potatoes, which were delivered all over the country, and also for the rest, in so far as the conditions of delivery were the same, twenty guilders more were paid for freight.

4. *Regulations Regarding Exports.*

Under the Act of March 11, 1916 (*Staatsblad* No. 127), regulations were established regarding the assessment of compensation for charges for the issuing of export permits, this being further regulated by a Royal Decree of June 10, 1916 (*Staatsblad* No. 274).

Cattle.

As a result of the floods in January of this year, it was permitted to export cattle from the inundated areas, the total amounting to 13,686 head. After May 10, export permits were allowed to the Netherland herd book, the Frisia herd book, and the Groningen herd book for the export of bulls less than eighteen months old and entered in their registers, as well as of milch cows and cows in calf, but with permanent dentition, their teeth showing a grinding surface. In all such cases, however, the purchase was to be effected by Netherlands exporters holding purchase-commissions from public bodies or agricultural societies abroad; and all animals must be approved by the veterinary surgeons of the district concerned. In the beginning of July, these exports were prohibited. The three herd books permitted a total export of approximately 20,000 head. In the autumn, export of a small number of animals, almost wholly milch cows and cows in calf, was allowed.

Horses.

During the spring of 1916, the only horses permitted to be exported were 3,000 mature geldings. In December, a ministerial decree placed all measures connected with the export prohibition under the control of the Horse Union; but in January, 1917, the export of 12,000 stallions and geldings under twenty months old was allowed.

Meat.

In 1916, the regulation of the export of meat and the supplying of pork for the population was also effected by the Pork Union (a name changed, in the course of this year, to Meat Union) and the Government Commission for its supervision. Export permits were again issued, though not without interruptions, for shipments of pork, beef, and mutton, as well as for offal, in return for the supplying of pigs at lower prices for home consumption. The weight percentage and the price were fixed by the Minister at the dates indicated for the purpose in the decrees in question. After February 20, the export of pork, with the exception of stocks then on hand in the factories, was stopped. By the decree of March 4, 1917, which replaced that of October 28, 1916, agricultural societies were enabled to obtain export permits for beef and mutton; but in April, these exports were also forbidden. By a ministerial decree of April 25, the export of pork was regulated afresh. Under this ruling, it was possible for exporters to place at the disposal of the Government more or less than the obligatory quantities of such meat in consideration of the right of purchase or of indemnification in proportion to the amount to be fixed for each export-period, this amount being considered as loss on each 100 kilos of pork to be supplied during that period for home consumption. Under this arrangement, the exporters were in a position to calculate their losses at the beginning of each period.

Export permits were also granted to unions which were active in promoting the breeding and fattening of pigs. For this group of exporters, the licenses were reserved for the Board of the Netherlands Agricultural Committee, which was to transfer a proportionate number thereof to provincial combinations of similar unions which might wish to export independently. The Board of the Meat Union, at the request of the Minister, reported in October that each purveyor of pigs (minimum weight 100 kilos) to the Government must pay the pig breeder 1.20 guilders per kilo weight, and that any purveyor neglecting this requirement would be excluded from all subsequent deliveries. The percentages of meat placed at the disposal of the authorities for home consumption in 1916 were as follows: pork, 100 to 150 per cent; beef, 30 to 60 per cent; mutton, 25 to 60 per cent; offal, 60 to 150 per cent. For pigs furnished to the Government the price in 1916 was seventy Netherlands cents and eighty cents per kilo, slaughtering weight 90 to 95 kilos. The amount of redemption referred to in the decree of April 25 was fixed regularly at forty Netherlands cents per kilo slaughtering weight.

Eggs.

As in 1915, for each consignment of eggs for which export permit was granted a fixed quantity had to be placed at the disposal of the authorities for domestic consumption. The fresh eggs thus made available were distributed, partly for direct consumption and partly for preservation, but by far the larger number were sold at auction for home use.

After March 19, ducks' eggs were compulsorily placed at the disposal of the Government for home consumption, though an exception was made in favor of duck raisers established in the inundated region of North Holland and of those who were under the supervision of the Central Committee of duck raisers; and a similar ruling was issued for goose eggs from April 2 to 21. Export permits for preserved eggs were granted from January 21 to 30 in so far as, in the opinion of the Government Commission of Supervision of the Egg Union, they were not required for home consumption. After July 3, exports of eggs under permits were limited to the frontier stations of Oldenzaal, Zevenaar, Groesbeek, Venlo, Roermond, Roosendaal, and Maastricht (exclusively for export to Belgium), and to the ports of Amsterdam and Rotterdam. Winterswijk was later added to the first named group.

Butter.

The percentage of the output of butter which had to be placed at the disposal of the authorities for home consumption varied between 20 per cent and 70 per cent.

During the first months of the year, the weekly quantity amounted to some 450,000 kilos; but in May, this had to be increased by 100,000 kilos. After this, it continued to grow until the beginning of July, when it reached about 700,000 kilos. The butter for home consumption amounted for the whole year to 28,994,220 kilos as against 17,726,648 kilos in 1915. After November 25, export of butter to Germany and Belgium was restricted to transport by rail *via* Enschede, Oldenzaal, Roosendaal, and Eijsden.

Cheese.

By a ministerial decree of December 24, 1915, to go into effect January 1, 1916, 20 per cent of the purchase or of the output of all kinds of cheese, with the exception of Leyden and Delft cumin, had to be placed directly at the disposal of the authorities for home consumption; but under a later decree, dated December 31, 1915, this exception was nullified. In other sections, the measure was applied in various ways. In Friesland, the obligation was imposed directly on the producers who, as a guarantee, kept a stock equal to the production of twenty-three days and delivered it to the Central Warehouses in Leeuwarden. In North Holland, the Cheese Union took over from the producers the share for home consumption; whereas in South Holland and Utrecht the trade was responsible for its collection.

The principal central warehouses in the latter provinces were established at Alkmaar, Hoorn, Purmerend, Zaandam, Amsterdam, Bodegraven, Gouda, Rotterdam, and Dordrecht; and the wholesale traders were supplied from the warehouses. After the month of March, no more export permits for cumin cheese of Leyden and Delft style were granted, and, as a result, no more cheese of this description was placed at the disposal of the authorities for home consumption.

After August 13, the percentage of purchase or output of all cheese (except cumin in Leyden or Delft style) reserved for home consumption amounted to 30 per cent. After October 15, this was raised to 40 per cent, and on November 19, to 50 per cent in consequence of the reduced output during the time of stabling. The quantities of Frisian cheese to be placed at the disposal of the authorities for home consumption were not always taken up. For this reason, the greater demand for cheese with a full percentage of fat, which seemed to exist especially during the winter of 1916-1917, was met by supplementing the shortage in South Holland with 40 per cent plus Gouda cheese from Friesland. Export permits for clove cheese were not granted after December 1. Exports of cheese to Germany and Belgium were restricted by a ministerial decree of November 25; after that date shipments abroad were allowed only by rail *via* Nieuwe Schans, Oldenzaal, Groesbeek, and Zevenaar for Germany, and Roosendaal for Belgium. During 1916, the total quantity of cheese placed at the disposal of the authorities for home consumption amounted to 29,104,800 kilos.

Milk.

The regulations for providing milk during the summer of 1916 were a continuation of those of the preceding winter. Persons, who during the summer of 1915 had supplied milk regularly in given communes were required to continue to do so during the summer of 1916 at a price equal to the 1914 summer price, plus, at most, between one and one-half and two Netherlands cents per liter, the execution of these rulings being promotable by various means. On condition that the municipal board concerned exercised a proper supervision, the Cheese Union agreed to contribute one cent per liter toward the payment for milk intended for consumption; and the union assumed this financial obligation as long as the cheese-makers received at least 57.50 guilders per fifty kilos of cheese with a full percentage of fat. In case of a lower price, the bonus would decrease in proportion, and if it dropped to below fifty-three guilders it would lapse altogether; but though this actually happened at the end of May, the bonus was retained, and since the decrease proposed for July 23 caused so much excitement that a stagnation in the milk supply was apprehended, the Cheese Union provided the funds necessary to continue the bonus until October 1.

The measures for ensuring a sufficient supply of milk during the winter of 1916-1917 were founded in the first place on the principle of maintaining the trade situation as it had been before the War, although at the same time it was necessary to reckon with the probability of a smaller output of milk at the farms concerned.

In order to gain a wider area from which a supply of milk might be obtained, the manufacturers of condensed milk and milk powder were not allowed to compete against wholesale dealers in milk for consumption or to fix purchasing prices higher than those (including the bonus) paid for such milk. The price for this milk was equal to that given in the winter of 1915-1916, but, in addition, the purveyors received a bonus of two and one-half Netherlands cents per liter. In so far as the funds required could be adjusted with reference to the export prices of the commodities in question, they were supplied by contributions from the Cheese Union, the Butter Union, the Union of Factories of Milk Products, and the margarine factories. The dairy industry and the factories for milk products were obliged to supply two-thirds of the value above a certain basic price, the remainder being obtained in the manner prescribed by Article 3 of the Distribution Act of 1916. The Union of Factories for Dairy Products was obliged, as before, to supply milk wherever necessary, and in 1916 it furnished 14,500,000 kilos of government milk. As the unfavorable location of some of these factories was an obstacle to forwarding milk in a state proper for consumption, timely measures were taken to cover the shortage in some of the large cities otherwise than by the milk supplied by these factories. Thus, after October 10, Amsterdam received daily, by rail, a quantity of milk (at first about 50,000 liters) from Friesland, this being supplied by thirty-two factories established in or near the Dokkum-Stavoren railway; and after December 5, a second milk train carried 25,000 liters of milk daily from Gelderland and Overijssel to Utrecht. In

March, 1917, when the supply of milk increased, the milk trains were taken off.

Potatoes.

On June 28, regulations were established for the export of early potatoes, exports of 50 per cent of the large potatoes of certain varieties being allowed, and the other 50 per cent being sold at auction for home consumption. The percentages for home requirements were, if necessary, altered every week, and at the same time maximum prices were fixed for retail sale. The last week in which exports took place under this decree ended on August 12, for it was abrogated as from August 15, after which only small quantities were shipped abroad. An exception was made, however, in connection with the arrears of the supplies for England in accordance with the agreement concluded by the Agricultural Export Bureau. These were sent to Great Britain in June, and one hundred wagons of seed potatoes were consigned to Belgium in the spring.

Potato-Flour.

The following statistics summarize the results of the regulations regarding the potato-flour derived from the 1915 harvest:

	Supplied for the manufacture of glucose	*Supplied for other industries and consumers*
March to September, 1916	95,510 bags at 18.00 glds.	108,944 bags at 26.00 glds.
October, 1916, to May, 1917	113,383 bags at 17.30 glds.	352,826 bags at 29.60 glds.

	Exported
March to September, 1916	362,377 bags at an average price of 41.30 guilders
October, 1916, to May, 1917	165,874 bags at an average price of 56.25 guilders

Export permits for the 1916 harvest had not thus far been granted for the use of potato-flour in bread-making.

Linseed.

In 1916-1917, export of linseed for sowing purposes was again allowed. Under the agreements made by the Agricultural Export Bureau two-thirds of the export were shipped to England and one-third to Germany and Belgium.

Flax.

At first, a special commission supervised the supply of raw materials for home industry; and from October 1, 1915, to January 31, 1917, it distributed 401,433 kilos. The Flax Union was established in November, 1916, and under the control of its Government Commission of Supervision it took charge of the apportionment. Between December 1, 1916, and August 1, 1917, it distributed 1,736,119 kilos at the prices fixed by contract with the spinning mills. The losses resulting from this were covered by a percentage levied on the export permits which, after February 21, 1917, amounted to four guilders per 100 kilos.

The export of raw flax was forbidden. The entire harvest, therefore, had to be prepared in the Netherlands, though this was possible only by exporting part of it to Germany half-finished (half-cleaned or half-broken). No export permits were granted for flax waste, the Flax Union purchasing it for the home industry. The shipping of flax was resumed systematically, permits being granted on December 30, 1916, for the export of the first tenth; on February 21, 1917, for the second tenth; on April 20 for the third and fourth tenths; and on June 15 for the fifth, sixth, seventh, and eighth tenths. The granting of export permits was entrusted in February, 1917, to the Government Commission of Supervision of the Flax Union; before this it was taken care of by the Industries Commission.

Seeds.

The producers and exporters of horticultural seeds registered with the Government Commission of Supervision of the Central Seed Bureau could obtain export permits for a number of these seeds; but for most varieties shipment abroad was permitted only on condition that certain quantities were placed at the disposal of the authorities for home consumption.

Vegetables.

Exports of cauliflower and carrots were temporarily allowed after April 7 (that permission was withdrawn on June 15); and of French beans after April 8. On June 28, export permits could again be obtained for the first and second grades of cauliflower and carrots, and for green peas forming part of consignments and offered at an auction conducted by the Auction Union registered with the Central Vegetable Bureau. The Auction Union was obliged to see that from each consignment a percentage, to be fixed weekly by the Minister, was sold at auction for home consumption, guarantees being required from the buyers at the time of the auction regarding the destination of the consignments purchased for such domestic use. Export permits were issued for vegetables the foreign destination of which was attested by a declaration of the market clerk, and which were loaded under official supervision at one of the places specified in the ministerial decree. Other vegetables were gradually placed under these regulations. After June 28, moreover, maximum prices were also fixed for the retail trade; but these were abolished in connection with the auction sale of the entire supply for home consumption for cauliflower on August 11 and for carrots and green peas on August 21. For another group of vegetables, export permits were issued on condition that a certain quantity should be placed at the disposal of the authorities at a lower price for home consumption. This applied to French beans, Hinrich's giant beans, white flower French beans, onions, carrots, beetroots, white cabbage, red cabbage, savoy cabbage, and kohlrabi. At times, other sorts of vegetables were required in place of those sold by auction (for example, for peas and French beans). Permits were granted to exporters registered with the Central Vegetable Bureau for consignments of vegetables salted, dried, or otherwise preserved and forming part of shipments sold at auction in the manner prescribed for export.

By a ministerial decree of September 5, directions were given concerning the preserved vegetables industry. Permits were granted to recognized exporters, after July 19, for salted spinach, on condition that for each cask of 200 kilos or less, two tins of three liters of preserved spinach at forty-five Netherlands cents per tin were placed at the disposal of the Central Vegetable Bureau. The export of salted beans, with the proportion to be placed at the disposal of the authorities for home consumption, was at first regulated in such a way, by a ministerial decree dated September 12, that for each one hundred casks for which exporters asked permits, thirty-five of prime quality, originating from the factories properly installed, had to be so placed at the disposal of the authorities at a fixed price. By a decree of October 25 in addition to these thirty-five casks an extra reserve of fifty casks for each one hundred for which export permits had been applied for, was required. The exportation of sauerkraut was allowed after November 18, and for each one hundred casks fifteen must be placed at the disposal of the authorities for home consumption.

Fruit.

The prohibition of exports of pears and apples led to the creation of the Central Fruit Union, and regulations established soon afterwards made it possible to export the finer varieties as from September 22. Temporary regulations were adopted for apples and pears (excepting virgin pears) which had been picked previous to the export prohibition. Export permits were not issued for any of the varieties of sweet apples and cooking pears. By a ministerial decree of October 26 (to be effective on November 15), regulations were made regarding the preserving of fruit. Apples and pears could be preserved only in so far as they formed part of consignments which had been sold at auction for export; but the purchase of inferior varieties was also allowed for this purpose if their prices fell below five guilders per 100 kilos.

Horse Carrots and Kohlrabi.

During February, a ministerial decree was issued permitting the export of horse carrots and kohlrabi if, for every 100 kilos for which licenses were granted, 200 kilos should be placed at the disposal of the authorities for home consumption. The prices were as follows: for carrots, 100 kilos at three and one-half guilders for drying, and 100 kilos at one and one-half guilders for fodder; for kohlrabi, two guilders and 1.10 guilders respectively.

Chicory.

By a ministerial decree of October 20, the export of 40 per cent of the 1916 harvest of dried chicory roots was allowed, but 60 per cent had to be placed at the disposal of the authorities for home manufacturers at a price not to exceed fifteen guilders per 100 kilos. This was in force until March 31, 1917, but in April it increased to 15.23 guilders, in May to 15.31 guilders, in June to 15.38 guilders, and eight Netherlands cents more per 100 kilos for each subsequent month.

Sugar.

According to a communication from the Sugar Union home deliveries during the 1915-1916 harvest amounted to 1,304,363 bags at eighteen guilders per 100 kilos; during that time the average price abroad was thirty-two guilders. In August, under Article 6 of the Distribution Act of 1916, it was forbidden to make alcohol from beetroots and sugar (otherwise than in molasses). All raw sugar of the 1916-1917 harvest was distributed among the refineries and the makers of products containing sugar, the Sugar Union being in charge of the distribution.

THE YEAR 1917-1918

1. *Provision for Artificial Fertilizers.*

The supply of potassium fertilizer was again fairly satisfactory, but the transport required careful consideration. Applicants were enabled at an early date to hand in their orders for 20 per cent potassium salt for use in the autumn. If ordered before March 23, this cost 3.75 guilders, and after that date 4.06 guilders, per 100 kilos in bulk f.o.b. Stassfurt. Notwithstanding various delays in transportation, considerable quantities had been imported by the end of August. When the railway transport of potassium salt from Germany to the Netherlands was stopped after September 15, much care was necessary to provide, with the supplies destined for them, such regions as could be reached only by rail. Early in November, there was some improvement in the delivery, and it was regular if not rapid. In December, 20 per cent potassium salt, kainite, and patent potassium could be ordered for the spring of 1918, and the Potassium Importers Union had been established to act as the intermediary. While retaining supervision and control, the Artificial Fertilizers Commission had placed the further distribution of potassium salt in the hands of this new organization so as to ensure all applicants a proportionate share of the stocks available and still to be imported. The prices for this spring distribution were calculated on the basis of 4.06 guilders for 20 per cent potassium salt, 2.60 guilders for kainite, and 7.75 guilders for patent potassium per 100 kilos delivered in trucks in bulk f.o.b. Stassfurt. The orders accepted for the spring were executed in full with regard to 20 per cent potassium salt and kainite, though 42 per cent of the orders for the former were replaced by kainite, and only 37 per cent of the patent potassium could be delivered.

Up to July 15, orders could be received for superphosphate, superammoniac, sulphuric acid ammoniac, Chilian saltpeter, and vegetable fertilizer. By the end of September, owing to the difficulties of importing from overseas, the Artificial Fertilizers Commission was obliged to announce that it could supply artificial fertilizers only so far as they or the raw materials for preparing them were in stock in the Netherlands. For wholesale deliveries of approved orders, this would amount to 65 per cent of superphosphate, 50 per cent of superammoniac (with a content of 4 x 11), 12 per cent of sulphuric acid ammoniac, 12 per cent of Chilian saltpeter, and 50 per cent of vegetable fertilizer (with a content of 3 x 6 x 8). The distribution of superphosphate commenced in October. Superphosphate of 14 per cent and 17 per cent was available which, including commissions and allowances, was supplied at 9.05 guilders and 11 guilders respectively per 100 kilos in bags delivered at the factory.

In January, superammoniac (4 x 11) was distributed at the price of twenty guilders per 100 kilos, subject to supplies on hand. For the small consignments of superammoniac (7 x 9) which were also available, the price was fixed at twenty-four guilders per 100 kilos. Soon afterwards, vegetable fertilizer was distributed at nineteen guilders per 100 kilos supplied in bags of fifty kilos. Whereas the percentages already noted were maintained for superphosphate, superammoniac, and vegetable fertilizer, this was not the case for sulphuric acid ammoniac. The distribution of this latter began at the end of February and involved quantities of 25 per cent or 20 per cent, the former for applications up to and including five hundred kilos, the latter for larger quantities. The price was 44.75 guilders per 100 kilos in bags delivered at the warehouses of the Commission or at the gasworks where deliveries were to take place. The subjoined table shows the quantities of artificial fertilizer which were ordered and delivered during the harvest year 1917-1918:

	Total quantities	
	Approved orders (in tons)	*Deliveries (in tons)*
Chilian saltpeter	72,863	10,914
Sulphuric acid ammoniac	24,841	5,207
Ammoniac superphosphate	17,708	8,854
Vegetable fertilizer	2,624	1,312
Superphosphate	94,523	62,340
Potassium salt (20 per cent)	204,250	204,250
Kainite	63,200	63,200
Patent potassium	15,810	15,810

2. *Measures Regarding the Harvest of 1917.*

The government provisions for the 1917 harvest were more extensive than in any previous year. In 1916, measures had been restricted to the purchase of cereals, legumes, and potatoes, but in 1917 the Government directed the cultivation of crops. As it became evident that the Netherlands would have to rely increasingly upon her own production of grain and fodder, measures were taken to restrict the cultivation of crops of which the output was larger than the consumption, in favor of those which were more necessary under the circumstances then prevailing; and this course was more directly promoted by fixing minimum prices which the Government would pay for the crops of the 1917 harvest. Under the Royal Decree of September 30, 1916 (*Staatsblad* No. 463), in accordance with Article 7 of the Distribution Act of 1916, nine crops were cited, the cultivation of which was either prohibited, restricted, or conditionally forbidden for the time being according to the parts of the country. It concerned brown and yellow mustard, the seeds of caraway, blue moonseed, spinach, canary seed, seed onions, flax, and sugar beets. The conditions upon which the cultivation of these crops was permitted were established by a ministerial decree of October 13, 1916. In each agricultural undertaking, a maximum area equal to that of the average for the years 1913, 1914, and 1915 was allowed for the above-mentioned crops. The burgomasters were charged with issuing permits for such cultivation and they were aided by the advice of a small commission of farmers as to the advisability of granting these permits, which must be handed in before January 15. As the prospects of an adequate food supply became less favorable, the cultivation of seven of the nine crops was reduced to 70 per cent by a ministerial decree of February 17. The growing of sugar beets was cut to 80 per cent of the average area under cultivation in 1914-1915; but it was unnecessary to make a further reduction in flax, and the exception regarding caraway seed already growing was maintained.

By a Royal Decree of February 3, 1917 (*Staatsblad* No. 204), the restrictions on cultivation were extended to the seeds of radish, cabbage, cauliflower, kohlrabi, turnips, and Westerwold ray grass, as well as to chicory, carrots, kohlrabi, turnips, cabbage, spinach, French beans, and scarlet runners. By a ministerial decree of February 16, the conditions for the cultivation of these crops were further elaborated. The groups were divided into: (a) chicory; (b) the seeds of Westerwold ray grass, radish, cabbage, cauliflower, kohlrabi, and turnips; and (c) carrots, kohlrabi, turnips, cabbage, spinach, French beans, and scarlet runners. Cultivation of groups (a) and (c) was permitted on an area equal to their average in 1913-1915, and of group (b) on 70 per cent of such average area. All this, however, did not apply to the cultivation of cabbage, cauliflower, kohlrabi, or turnip seeds for the personal use of the market gardeners or to such crops as were already growing when the decree was issued; and it held still less in the case of the cultivation of carrots, kohlrabi, turnips, cabbage, spinach, or French beans for family use in kitchen gardens. It was equally inapplicable to land which belonged to an exclusively horticultural establishment, and which had formed part of it in 1915 and 1916, or to intermediate or after-crops of flower bulbs and early potatoes, or to after-crops of cereals.

The cultivation of coarse horticultural products was unrestricted in so far as they were raised on newly broken grassland, but even in this case, purely as a measure of control, the burgomaster's permit was required. In December, 1916, an Advisory Commission had been appointed to execute Article 7 of the Distribution Act of 1916; and the supervision and control of the measures for restricting the cultivation of crops were now handed over by a ministerial decree of April 27, 1917, to Provincial Cultivation Commissions which appointed inspectors for these purposes.

Besides these measures, others were adopted regarding commandeering and prices. A ministerial decree of July 19, 1917, announced that the total yield of the following crops of the 1917 harvest was, or would be, commandeered: winter and summer wheat, spelt, winter and summer rye, winter and summer barley, oats, bearded oats, buckwheat, peas, field beans, all other sorts of beans, and canary seed. It was further stated that in each province a government commissioner for collecting government grain would be charged with commandeering and collecting such products, these government commissioners replacing the Provincial Bread Commissions. The purpose was to obtain more unity in collecting grain, a more rapid and more energetic execution of the measures adopted, and a closer contact with the Department. By a ministerial decree of August 4, the following crops of the 1917 harvest were commandeered: cabbage seed, rapeseed, spring rapeseed, gold of pleasure seed, blue moonseed, and linseed, as well as products made from them, while such seed from former crops was likewise commandeered shortly afterward by a decree of August 28. The purpose of this course was to prevent cattle cakes made of these products from being mixed with various components of fodder which were often inferior. By a ministerial decree of September 24 the entire potato harvest of 1917 was taken over by the Government at rates which had previously been determined.

The policy with regard to prices was designed primarily to aid extension of the cultivation of cereals and legumes. In the *Staatscourant* of December 12, 1916, the Minister announced that the crops raised for domestic use would, in case of need, be purchased by him at good prices. The fixing of the prices for each product was to be in charge of a commission consisting of three members appointed by the agricultural organizations and three by the Minister. These commissions were to base their decisions primarily upon the cost of production and by the decree of February 20, 1917, guaranteed prices were fixed for the following commodities: wheat, rye, summer barley sown in two rows, winter barley, oats, potatoes for food, green peas, field beans, brown and white beans. At the same time, it was announced that these prices would be raised if necessary. The decree of April 5, 1917, added guaranteed prices for gray and yellow peas; that of July 24 for spelt, summer barley sown in two rows, bearded oats, buckwheat, and canary seed; that of August 27 for cabbage seed and rapeseed, both for the 1917 harvest and for previous ones; that of September 18 for blue moonseed, gold of pleasure seed, spring rapeseed, and linseed, both for the 1917 harvest and for previous ones. The decree of October 6 made some changes in prices which were finally fixed as follows, after the potato harvest also had been taken over on September 25: wheat (winter and summer), 19 guilders; spelt, 17.50 guilders; rye (winter and summer), 19 guilders; winter barley and summer barley sown in four rows, 17.50 guilders; summer barley (chevalier), sown in two rows, 18.50 guilders; oats, 17.50 guilders; bearded oats, 16 guilders; field beans, 22 guilders; peas (all sorts of green, yellow, and gray), 31 guilders; beans (all sorts of brown, yellow, and white), 31 guilders; buckwheat, 25 guilders; canary seed, 28 guilders; cabbage seed, 65 guilders; rapeseed, 65 guilders; blue moonseed, 60 guilders; gold of pleasure seed, 35 guilders; spring rapeseed, 65 guilders; and linseed (for mills), 40 guilders;—all on a basis of 100 kilos. The decree of October 16 made the following alterations regarding peas: Wyk maple and Groningen garden peas, 33 guilders per 100 kilos; hand-picked Wyk maple peas, flat capucine peas, raisin, and gray peas, 35 guilders per 100 kilos; hand-picked flat capucine peas, raisin and gray peas, 40 guilders per 100 kilos. By the decree of February 20, 1918, the maximum price of 45 guilders per 100 kilos was fixed for yellow mustard seed.

The prices of potatoes under the above-mentioned decree of July 24, 1917, were as follows: clay-grown potatoes (potatoes for consumption destined for delivery in the autumn), 6 guilders; sand-grown and moor-grown potatoes (not factory potatoes, and also destined for delivery in the autumn), 5 guilders,—both per 100 kilos. For deliveries after a certain date, the growers received an allowance for storage. The growers of buckwheat were permitted to retain one hectoliter for their own use; and, furthermore, a part of the grain and legumes commandeered during the period between September 1, 1917, and June 30, 1918, was left to the growers for feeding their own cattle. For further details, we may refer to what will presently be said in regard to providing fodder.

The distribution of potatoes was carried out on the basis of a weekly ration of four kilos per capita. At first, besides yellow-core sand-grown and moor-grown potatoes, a limited quantity of clay-grown potatoes (Eigenheimers, Borgers, and Industries) was also supplied up to a maximum of 40 per cent of the required quantity; but from the beginning of November the distribution of clay-grown potatoes was stopped excepting for reserve stocks of the communes, an amount sufficient for six weeks being provided to obviate any difficulty that might arise from interference with transportation.

Through the agency of the Potato Union and the seven regional organizations of potato dealers, 71,129 wagons of potatoes were supplied to the communes.

3. *Provision for Fodder.*

The difficulty of importing foreign grain and other forage increased to such an extent in 1917 that soon none were to be had. During the early part of the year, the Government had purchased grain and American linseed cakes from all dealers who offered them, but the amount was small, so that all importations were taken over by the Government. The steamers which left for America in March brought on their return trips considerable cargoes, though principally breadstuffs and very little grain for fodder. Now, however, grain imports almost ceased; and a number of vessels which had been loaded with fodder grain and linseed cakes lay in American ports for several months and finally their cargoes had to be discharged. The stocks of fodder became further depleted as the demand for maize and other cereals for human consumption increased. Owing to these circumstances, the home production of grains for fodder purposes became very important. From September 1, 1917, to June 30, 1918, a part of the grain and legumes commandeered from the farmers was left to them for feeding their own cattle: *viz.*, for stallions and heavy horses used for agricultural purposes, 800 kilos; other horses of over three years for the same work, 600 kilos; horses less than three years of age, 200 kilos; bulls, 350 kilos; milch cows, 400 kilos; and pigs of less than fifty kilos, 150 kilos. So far as possible, oats and beans were to be left for horses, and barley for other animals, though if the quantities on hand were inadequate, they could be supplemented by barley for the first group and by oats for the second. If the harvest on the farm should not prove sufficient for the rationing of the stock of cattle, fodder was supplied by government distribution. During the first months of 1917, maize was still furnished to the municipal administrations in exchange for rye of the 1916 harvest at the price of 8.22½ guilders per 70 kilos. The distribution of forage continued in about the same way, but the monthly quantity could not be large.

In the beginning of October, 1917, the Bieta Company, Ltd., was established by the coöperation of certain selected wholesale dealers and prominent agricultural organizations, its aim being to purchase and distribute beetroots, mangelwurzels, kohlrabi, etc., as Royal Commissioners under the supervision of a member of the Allotment Commission for Fodder. This was done through agents in the various provinces who, by appointing sub-agents, availed themselves of the services of the trade and of the agricultural organizations.

Various measures were taken in order to meet the very great demand for fodder straw owing to the inadequacy of the hay crop.

By ministerial decrees of September 11 and October 1, the following maximum prices per 1,000 kilos for compressed straw delivered by the producers at the nearest railway station or deep canal were fixed:

	guilders
Grain straw and canary-seed straw	35
Straw of peas and brown or white beans	50
Other bean straw	30
Straw of rapeseed, mustard seed, caraway seed, and blue moonseed	20

In case the straw was delivered directly to the consumers, these maximum prices could be raised by five guilders per 100 kilos plus the net railway or barge freights and rental charges for covering cloths; but they did not apply to quantities less than five hundred kilos.

By a ministerial decree of November 12, the transportation of grain straw to the strawboard factories was prohibited unless covered by a transport permit issued by the Groningen Agricultural Union, these licenses being given only for consignments of straw unfit for fodder.

On July 26, 1917, maximum prices were fixed for sugar beet mash, but these were amended on October 6 owing to the increase in freight rates. These maximum prices were: for wet mash delivered on the cart at the factory 4.50 guilders, or free alongside quay "Holland," 6.75 guilders per 1,000 kilos; for dried mash, 10.50 guilders per 1,000 kilos; and for sugar mash containing at least 30 per cent of sugar, 14 guilders. By ministerial decrees of March 17 and 27 and May 3, regulations were established for the distribution of mash. Under these rules, the growers of beetroots were allowed to retain for the exclusive use of their own cattle 50 per cent of the beetroots supplied by them; but this percentage, under a later regulation, might be increased under the advice of the Government Agricultural Instructor concerned in the cases of some farms in sandy soil. The remainder, called trade mash, was placed at the disposal of the Allotment Commission for Fodder.

4. *Pork.*

At the beginning of 1917, pork could still be exported on condition that 100 per cent of the weight be placed at the disposal of the authorities for home consumption; but this obligation was redeemable at the rate of forty Netherlands cents per kilo. Later in the year, exports ceased. New regulations were introduced in April for the supply of pork and bacon to the municipal administrations, the maximum ration being two pigs of approximately two hundred kilos per week for each thousand inhabitants. Live pigs mainly were supplied, but communes for which this regulation was burdensome were permitted to provide pork by effecting purchases themselves. For such cases, the Meat Union fixed the prices weekly. Live pigs were delivered to the communes at a maximum of 1.25 guilders per kilo slaughtering weight and it was suggested that the butchers pay 1.85 guilders per kilo slaughtering weight. So long as no live pigs could be supplied, the communes received salt pork at 85 Netherlands cents per kilo. In the middle of November, the distribution ration was reduced to a maximum of half the quantity. In 1917, a total of 401,902 pigs was delivered at 370 places for 698 communes; 375 communes purchased pigs for themselves.

5. *Dairy Products.*

Milk.

The summer regulations for milk were introduced on May 1. For this purpose, the Netherlands was divided into two milk zones, one around the large cities with a maximum production price of 11½ Netherlands cents per liter, and the other including the rest of the country with a maximum production price of 11 cents per liter free at farm, these rates being based on annual prices of 12½ and 12 cents respectively. The maximum consumption price was 13 cents; but since this yielded too small a margin of profit to the trade, a bonus of from ½ to 2½ cents was given, and this was later raised to 3 cents for the three largest cities. Under the regulations established on May 18 for industrial milk, the butter and cheese factories were obliged, in case a shortage still existed, to supply milk for consumption after the Union of Factories of Dairy Products had delivered 75 per cent of its entire receipts, less the quantity of milk of full percentage of fat which had been worked into butter and cheese on the same date of the previous year. A shortage of milk was taken to exist when the quantity amounted to less than a daily consumption of three-tenths of a liter per capita in the commune concerned. As already stated, the manufacturers of dairy and milk products contributed to the supplementary supplies of milk for consumption.

Under the regulation introduced on October 15 for the supply of milk for consumption in the winter of 1917-1918, the maximum cost of production for the two milk zones was increased to 14½ and 14 Netherlands cents per liter respectively; and the consumers paid a maximum price of 15 cents per liter delivered at their homes. In divergence from the summer regulations, allowances were given for buttermilk, and skim-milk, these amounting to maxima of 4½ cents per liter for milk containing a full percentage of fat and 3 cents per liter for buttermilk and skim-milk. There were various reasons for amending these winter regulations by the ministerial decree of January 5, 1918. In the first place, the expenses for the supply of the supplementary industrial milk (government milk) proved to be much heavier than had at first been estimated; and, further, many milk establishments, owing to the smaller turnover and the higher prices of coal, could not do without an increased margin of profit of ½ cent per liter. The maximum consumption price of milk of full percentage of fat delivered at the house was, therefore, raised to 17 cents per liter, and the bonus for each liter of milk, buttermilk, or skim-milk brought into consumption was fixed at 3 cents. In communes where milk retailers were in a position to continue their trade at a margin of profit of less than 3 and 3½ cents respectively per liter, it was possible to fix a lower maximum retail price than 17 cents per liter, and this was actually done in a number of places.

The growing inadequacy of the production of milk very soon caused a shortage in the large cities. Toward the end of 1917, the Union of Factories of Dairy Products was supplying more than the obligatory quantity of 75 per cent of the milk receipts of its members, and the Butter and Cheese Union was obliged to come to the rescue if the shortage was to be taken care of. Various butter and cheese factories were also directed to supply the large cities with milk. With a view to averting the threatening scarcity of milk during the winter of 1917-1918, a considerable milk reserve had been assembled in the form of condensed skim-milk, milk powder, and skim-milk powder.

Butter.

The percentage of the output of butter which, during 1917, had to be placed at the disposal of the authorities for home consumption was generally larger than on the corresponding dates of 1916. During the first four months of the year, the amount thus made available for domestic use was some 470,000 kilos per week. A period followed during which much larger quantities were placed at the disposal of the authorities, a maximum of 1,038,608 kilos being reached during the week from August 28 to September 4. After this, there was a decline; from November 6 the weekly quantity did not exceed 300,000 kilos. For the entire year, it amounted to 29,305,232 kilos as against 28,994,220 kilos in 1916. After October 22, the transportation of more than five kilos of butter was prohibited unless a special permit had been issued for it, such licenses being granted only to members of the Butter Supervision Stations, to wholesale dealers, and to producers registered with the relevant Government Commission of Supervision but not members of a Butter Supervision Station.

Cheese.

During the entire year 1917, 26,608,819 kilos of cheese were supplied for home consumption; of these there were 9,239,500 kilos of Gouda cheese containing a full percentage of fat; 4,357,147 kilos of Edam cheese containing 40 per cent fat in the solid substances; and 13,012,172 kilos of factory cheese. The distribution of cheese was effected through the agency of the regular trade (registered wholesale dealers) and of the burgomasters. The latter sent the orders from the retail dealers, who were not in a position to receive any cheese, or not enough cheese, from the wholesale dealers, to the Cheese Union through the Government Distribution Bureau. These

Burgomasters' Orders, as they were called, were executed in full in so far as the retail dealers did not apply for more cheese than they required for their average weekly sales.

As had also been the case in 1916, a certain percentage was supplied to the registered wholesale dealers weekly on their orders based on their average weekly turnover calculated from August 1, 1912, to August 1, 1914. It was not always possible to supply from the stocks in the central warehouses the kind of cheese ordered by the wholesale dealers and the communes, but other varieties were substituted excepting in the case of Gouda cheese with a full content of fat, where the following percentages were furnished on the following dates: January 1, 25 per cent; August 20, 75 per cent; October 1, 60 per cent; October 8, 60 per cent; October 29, 50 per cent; November 5, 25 per cent; November 12, no delivery. Owing to the new prices under the ministerial decree of November 29, 1917, nothing was delivered from the beginning of December to the end of the year.

Eggs.

As in the preceding years, a quantity of fresh eggs had to be placed at the disposal of the authorities for home consumption for every like amount for which an export permit had been granted. This quantity was determined every week by the Minister and had to be delivered, partly or entirely, at a price which was also fixed weekly. In order to check the quantity and weight of the eggs placed at official disposition for domestic use the Egg Union, in the spring of 1917, established what were called stamping houses where the exporters delivered eggs destined for distribution. About 60,000,000 hens' and ducks' eggs were reserved for preservation, partly on behalf of the municipal administrations (for private persons), bakers, and industrialists, and partly for export. These exports would cover the adverse balance resulting from the low prices of the distribution for home consumption. The maximum retail price of preserved eggs was ten and one-half guilders per hundred. Their export was allowed only *via* stations and ports specially indicated. No more permits for the export of fresh eggs were issued after October 29 because in November and December the output would be very low. Owing to the lack of eggs, none could be placed at the disposal of the authorities, and the distribution of fresh eggs necessarily stopped. As a great rise had taken place in the prices of fresh eggs, a maximum retail price of 16 Netherlands cents each was established on November 13. In the first half of 1917, 129,609,116 hens' and 3,389,060 ducks' eggs, and during the second half of the year, 34,284,336 hens' eggs, were placed at the disposal of the authorities for home consumption.

6. *Horticultural Products.*

Vegetables.

In May, all the regulations promulgated hitherto with regard to the export of fresh vegetables were withdrawn. Registered importers could now obtain export permits for vegetables. These were sold at auction in accordance with the instructions, had to be loaded under official supervision, and must satisfy one or more of the following conditions: (1) of each consignment of non-staple vegetables to be sold at auction for export, a certain percentage must be auctioned off for home consumption; (2) for each consignment of vegetables to be sold at auction for export, a certain quantity of some other vegetables must similarly be sold for home consumption; (3) of the proceeds of a consignment of vegetables sold at auction for export, a certain percentage established for that description of vegetables must be placed at the disposal of the Central Vegetable Union; (4) the execution of other regulations to be established on behalf of providing food for home consumption; (5) of every 100 kilos of specially indicated preserved or staple vegetables, a certain quantity must be placed at the disposal of the Central Vegetables Union. No permits were given for vegetables which had been cultivated in contravention of agricultural regulations. A new arrangement was made for the preservation of vegetables by the decree of June 27. After November 6, the following staple vegetables were indicated for distribution: red and yellow cabbage, onions, Frisian and other fine carrots, and kohlrabi, as well as French beans in cask, single and double French beans, and sauerkraut. In connection with the establishment of the Central Export Bureau, the municipal administrations were subsequently charged the cost of production plus a reasonable profit; the difference between these amounts and the prices based on placing the vegetables in question at the disposal of the authorities *in natura* was paid over to the Netherlands Export Company.

Fruit.

As in the case of vegetables, all regulations regarding the export of fruit were withdrawn in May. Under the new rules, export permits could be obtained for all sorts of fresh fruit and nuts, gooseberries, strawberries, cherries, black and red currants, raspberries, whortleberries, melons, peaches, grapes, pears, apples, plums, cranberries, crab-apples, medlars, filberts, and walnuts. For most of these, a percentage was established to be sold at auction for home consumption, for the factories, and for export. New regulations for the preservation of fruit were adopted on June 23. The drying of all kinds was prohibited as from November 20, and no more export permits were granted after December 7 for apples and pears.

Seeds.

As heretofore, permits for special varieties of seeds were granted to registered exporters and growers of horticultural seeds. Generally speaking, the seeds exported must have been obtained from a contract registered with the Central Seed Union or from the grower's own cultivation. The amount exported by each shipper was fixed at an average commensurate with his former turnover. Furthermore, when seed was exported a certain quantity for sowing purposes had generally to be placed at the disposal of the authorities for home consumption. Pointed spinach seed could still be put under their control when round spinach seed was exported; and other seeds were placed at their disposal at production prices fixed by the Minister in connection with the establishment of the Netherlands Export Company. Subsequently, arrangements were made for the export of what was called free seed.

THE YEAR 1918-1919

1. *Provision for Artificial Fertilizers.*

In the first half of July, 1918, artificial fertilizers for the 1919 harvest might be ordered. As the prospects for importing them were very uncertain, the Government Bureau for Artificial Fertilizers, which had taken over the task of the Artificial Fertilizers Commission, decided not to allow special kinds to be ordered and to receive only applications for the nitrogenous and phosphoric acid varieties.

The distribution would then take place in accordance with the decision of the Bureau just mentioned. For nitrogenous fertilizer, Chilian saltpeter or sulphuric ammoniac might be supplied; and for phosphoric acid fertilizer, superphosphate, Thomas phosphate, or bone meal. The applicants must agree in advance to be satisfied with the kinds and quantities of the artificial fertilizer, as well as with the time of delivery. In view of the small stocks and the lack of sufficient arrivals, the artificial fertilizers available and to be expected were destined exclusively for those applicants who had cultivated rye in 1918. For each hectare of rye proposed to, and approved by, the Government Grain Bureau, fifty kilos of nitrogenous and one hundred kilos of phosphoric acid fertilizer were to be allotted, this latter being raised subsequently to one hundred and twenty-five kilos by adding superphosphate. If the area thus set apart for rye amounted to five hectares or more, an extra one hundred kilos of superphosphate were allowed. Owing to the changes which had occurred in the meantime, the prospects for importing artificial fertilizer became much more favorable. The purchase, on behalf of the Government, of 125,000 tons of Chilian saltpeter assured to all applicants the full amount of the nitrogenous fertilizer which they desired, and sixty kilos per hectare of arable or horticultural land were provisionally distributed to each applicant, the farmers in the peatmoor areas enjoying precedence with three hundred kilos per hectare, while favorable expectations regarding imports allowed the Government Bureau to take orders, from January 21, 1919, for more. The prices per 100 kilos f.o.b. at the place of storage charged to the growers of rye were as follows: phosphoric acid fertilizer and bone meal (4 x 20 and 1 x 30), 20 guilders; Thomas phosphate (17½ per cent), 10.50 guilders; superphosphate (14 per cent), 12 guilders; nitrogenous fertilizers (first distribution) and Chilian saltpeter (15½ per cent), 45 guilders; and 20 per cent sulphuric acid ammoniac, 60 guilders; later distribution: Chilian saltpeter, 36 guilders; and sulphuric acid ammoniac, 48 guilders.

In January, the importers of potassium fertilizers obtained some small consignments of 20 per cent potassium salt and kainite which were allotted to those who had ordered them in December; and any quantities then available had to be placed, so far as possible, at the disposal of customers in the peatmoor areas. The price was 8.70 guilders for 20 per cent potassium salt and 6.10 guilders for kainite delivered in bulk free alongside steamer or on railway truck Rotterdam.

In connection with the very bad prospects regarding imports of potassium fertilizers, new orders were not accepted.

The following table shows the provision of artificial fertilizer during 1916-1919:

	Total quantities (in tons)					
	Approved orders			*Deliveries*		
	1916-17	*1917-18*	*1918-19*	*1916-17*	*1917-18*	*1918-19*
Chilian saltpeter	69,066	72,863	141,121	58,208	10,914	116,737
Sulphuric acid ammoniac	23,761	24,841		3,618	5,207	3,960
Ammoniac superphosphate	17,705	17,708	....	11,508	8,854	....
Vegetable fertilizer	1,642	2,624	....	1,642	1,312	....
Superphosphate	96,559	94,523	....	54,980	62,340	10,138
Thomas meal	....	....	245,000	....	....	2,047
Bone meal	....	....	....	....	....	4,431
Potassium salt	214,042	204,250	....	214,042	204,250	28,728
Kainite	....	63,200	....	....	63,200	24,052
Patent potassium	30,865	15,810	....	30,865	15,810	750

2. *Provision for Fodder.*

This section in the 1917 report began with the remark that the difficulties of importing fodder had so increased during that year that imports gradually ceased altogether, and it looked as if the situation would become still worse in 1918. The Minister, therefore, on November 12, 1917, suggested to the farmers that they reduce their stock of cattle as much as possible, and it was pointed out to them that they would themselves have to cultivate heavy fodder for their own cattle. It was suggested for this purpose that one or more plots of grassland be broken up for the cultivation of beetroots, mangelwurzel, kohlrabi, oats, and horse beans. Part of these crops would be left to them for feeding their own cattle, the precise quantity being fixed later on. The settlement of the distribution of fodder was, as in the year preceding, placed in the hands of a Commission for the Allotment of Fodder and the fodder bureaus, which were replaced in June by a Government Fodder Bureau and by provincial bureaus. The fodders were ordered from the Government Commissioners for the Collection of Grain from factories working under the Netherlands Overseas Trust, and from some eleven establishments operating for the fodder bureau which prepared molasses fodder for horses.

This molasses fodder was made from molasses from the Molasses Bureau of Zevenbergen, from bran from the factories working for the Government Grain Bureau, and from chaff, and contained about 24 per cent of sugar. This work was supervised by the Wageningen Government Agricultural Experiment Station for the examination of fodder. Since complaints were made regarding the excessive percentage of water in the molasses, it was sold on the basis of its percentage of sugar. The price was twenty guilders per 100 kilos. At first, this fodder was allotted in the distribution; but since it did not meet with universal approval, it was later supplied only to those who wished to receive it.

In 1917, juggling with fodder commodities had reached its height; all sorts of mixtures of very inferior quality were marketed under this category; and the Minister, by his decree of September 18, 1917, endeavored to prevent this by prohibiting the transport and delivery of fodder unless it was unmixed.

This prohibition was followed by one which came into force on May 15, 1918, and which forbade grinding into meal, straw, chaff, the sweepings of grain, legumes, or commercial crops, broom, reeds, or the husks of cacao, buckwheat, groundnuts, acorns, flax, rice, or coffee. The Government Fodder Office could, however, make exceptions to the interdictions on mixing and grinding under special conditions.

The decree of March 13, 1918, regulated the distribution of the mash of sugar beets, and forbade manufacturers of beet sugar to sell or deliver mash without first having received permits from the Minister. When such licenses had been granted, the delivery must take place as directed by the Fodder Bureaus at a maximum price to be fixed by the Minister. It was further provided that those who had cultivated beetroots on contract would be considered first in receiving mash, *i.e.*, 3,000 kilos for each milch cow and 2,000 kilos of wet pulp for every other head of cattle which had reached the age of eight months by January 1, 1916. The quantity remaining after deduction of the "contract mash" was to be allotted as "trade mash" to cattle breeders by the Commission of Allotment (later the Government Office for Fodder), and those who wished to qualify for receiving this were required to send applications to the Fodder Bureaus.

During the 1918-1919 harvest, a total quantity of 383,326 tons of wet mash was delivered, of which 383,326 tons were "trade mash." The quantities of dried and sugar mash taken over by the Government were at first reserved for the preparation of bread, but later on, when the prospects of the food supply improved, they were distributed as fodder.

As has already been noted, the cultivation of beetroots had been recommended by the Minister to obviate the shortage of fodder. At the same time the maximum prices of the 1918 crop had been fixed very low, to keep land suitable for raising foodstuffs from being used to cultivate fodder for speculation. In consequence, the offers to the "Bieta," which was again in charge of the distribution for the 1918-1919 harvest, amounted to only a few thousand tons. The applications exceeded the offers to such an extent that it was decided to withdraw the measures regarding distribution and maximum prices, the decree of December 14, 1918, being the result. Now that the trade in root crops had been freed from restrictions, the price of beetroots for fodder rose rapidly to thirty-five and forty guilders per 1,000 kilos. This caused no little bad feeling among those who had delivered their beetroots to the "Bieta" before the decree, thus proving their willingness to execute the government measures. After this cancellation of the regulations, the directors of the "Bieta" considered its usefulness ended, and they accordingly advised its liquidation, which was carried into effect soon afterwards.

On February 12, 1918, the Minister announced that hay would also be included in the distribution, and the following measures were announced for the purpose: the maximum price to the producer for first quality hay was eighty guilders per 1,000 kilos free train or ship, the rates for hay of inferior quality being proportionately less. Transport of hay without a permit was prohibited. A decree of May 29, 1918, established a Central Hay Bureau at The Hague, as well as a Provincial Hay Bureau for each province, and at the same time, as had already been announced in February, it prohibited the transport of hay. This interdiction, however, did not apply to the transportation of hay from land not farmed out annually, provided that such transportation was effected by the shortest route from the farm to the cultivator's granary; nor did it hold in the case of transporting hay under a permit issued by a Provincial Hay Bureau. The maximum price of eighty guilders per 1,000 kilos, already announced, was fixed by this decree. The purpose of the regulation was to distribute hay more equitably for the army, thus lightening the burden, and to supply the large cities. To prevent speculation and the consequent inflation in prices, the purchase and sale of hay must be effected exclusively through the Hay Bureaus, which were now charged with the distribution. The cultivators had to deliver at an official valuation the hay which they wished to sell to the Hay Bureau, and the latter fixed the quantity to be supplied by each farmer. If the farmers proved unwilling to agree with these regulations, the burgomasters were authorized by the Distribution Act to commandeer the hay.

In view of the shortage of fodder, the distribution of straw was also taken in hand, and maximum prices for it were fixed as in 1917. In the spring of 1918, the transportation of straw was forbidden in the provinces of Groningen, Zeeland, North Brabant, and Limburg, though an agricultural organization appointed for the purpose in each of these provinces could grant dispensations from this prohibition to farmers and dealers in straw, while in the province of Groningen exemptions might also be given to the strawboard factories. When the pasture season came, and the demand for fodder straw almost ceased, the Minister announced that straw might be made into cartons. Those who still desired to buy straw for fodder had to notify the Groningen Agricultural Union before May 5 (proclamation of April 27, 1918). On June 12, before the beginning of the 1918 harvest, it was announced that the straw of that crop would be included in the distribution, and that it would be placed in the hands of the Hay Bureaus. This was regulated by a decree of July 31, 1918. This decree prohibited the transportation of straw, though this interdiction did not apply to moving hay from the farm by the shortest road to the cultivator's granary; nor did it hold in the case of transporting straw under a permit issued by a Provincial Hay Bureau. The hay bureaus, however, would grant such licenses to the strawboard factories for only half of the normal annual consumption.

3. *Measures Regarding the Harvest of 1918.*

Since the provision of food for man and beast was likely to prove more difficult in 1918 than in 1917, the number of measures regarding the 1918 harvest was greater than those of the year preceding.

These regulations sought to promote the cultivation of such crops as were most used in the Netherlands, and they were both direct and indirect.

The measures, the purpose of which was either to limit the cultivation of such crops as occupied a larger area than was necessary for the Netherlands or to allow them only conditionally, were of an indirect nature. By a Royal Decree of February 3, 1917 (*Staatsblad* No. 204), the number of crops the cultivation of which could be prohibited, limited, or allowed only conditionally, was extended from nine to twenty-one. By this decree, the single article of the Royal Decree of September 30, 1916 (*Staatsblad* No. 463) was amplified so as to include radish, cabbage, cauliflower, kohlrabi, turnip, and Westerwold ray grass seeds, as well as chicory, carrots, kohlrabi, turnips, cabbage, spinach, and French beans. By a Royal Decree of November 6, 1917 (*Staatsblad* No. 615), were added to this list all sorts of vegetables and their seeds. Although the ministerial decree which limited the cultivation of crops in accordance with the Royal Decrees just mentioned was published on November 16 in the *Staatscourant*, it had been preceded in the course of 1917 by numerous announcements and proclamations which showed that the restrictions for 1918 would be extensive, so that when it appeared, the interested parties were already in a position to take its main contents into consideration. Excepting for the extension of the number of restricted crops, the regulation was in the main the same as that of 1917. In fixing the maximum percentage of the area for each group of crops, the average cultivation of 1913, 1914, and 1915 had again been taken as a basis. The burgomasters were once more to control the issue of permits and after consultation with the cultivation commission of their province they could grant licenses in special cases for raising particular crops on a larger area than the interested party would be entitled to under the general ruling. The regulation of 1918 did not affect market-gardening. The restriction regarding such production aimed only at checking cultivation by persons who had not been engaged in it during the years 1913, 1914, and 1915, and at preventing land which had always served for raising foodstuffs from being withdrawn for speculative purposes.

The direct measures for the increase of food were: (a) inducements to break up grassland by granting premiums for the crops grown thereon; and (b) the fixing of guaranteed prices for various crops of the 1918 harvest.

Since the area of grassland had of late years increased constantly, and since the quantity of foodstuffs produced on arable soil was considerably larger than that grown on grasslands, the breaking up of the latter was taken in hand by the Government. For that purpose, a decree of August 16, 1917, promised a uniform bonus for the cultivation of certain crops on land so regained; and this was subsequently increased, the final amounts being as follows:

Wheat	7.50 guilders per 100 kilos up to a maximum of 250 guilders per hectare
Rye	10.00 guilders per 100 kilos up to a maximum of 250 guilders per hectare
Oats	7.50 guilders per 100 kilos up to a maximum of 175 guilders per hectare
Peas	7.50 guilders per 100 kilos up to a maximum of 175 guilders per hectare
Brown beans	15.00 guilders per 100 kilos up to a maximum of 350 guilders per hectare
Potatoes	0.75 guilder per 100 kilos up to a maximum of 180 guilders per hectare

Owing to these premiums, 28,602 hectares of grasslands were ploughed up for the cultivation of premium-crops. In view of the scarcity of fodder, the cattle breeders were advised on November 12, 1917, to break up grassland for the cultivation of turnips and mangelwurzels for their own cattle. On February 16 and April 9, 1918, the Government announced that owners of cattle and horses who were unable to plough up grassland included in their own farms, but who were in a position to obtain such land from others, could retain for their own animals a certain quantity of oats, horse beans, beetroots, and kohlrabi grown on such lands, the precise amount to be determined later.

A second direct measure for promoting the food supply was the fixing of guaranteed prices for crops to be delivered to the Government. On April 3, 1918, the Minister of Agriculture, Industry, and Commerce announced an intention to commandeer not only such crops of the 1918 harvest as had been so expropriated during the preceding year, or for which maximum or guaranteed prices had been fixed, but also to seize all other products which were adapted for fodder purposes. The guaranteed prices per 100 kilos were fixed as follows by the decree of September 15, 1917: wheat, 21 guilders; rye, 22 guilders; and winter barley, 18.50 guilders; by the decree of September 25, 1917, they were: for oats, 18 guilders; four-row summer barley, 19.50 guilders; two-row summer barley, 18.50 guilders; field beans, 25 guilders; peas (all sorts of green, yellow, and maple), 30 guilders; beans (all sorts of brown, yellow, and white), 32 guilders; potatoes (for table use, grown in clay, sand, and moor, and delivered in the autumn of 1918), 6.50 guilders; caraway seed, 45 guilders; canary seed, 28 guilders; blue moonseed, 60 guilders; yellow mustard seed, 35 guilders; and brown mustard seed, 50 guilders. The prices of caraway, canary, blue moonseed, and yellow and brown mustard seed were to be maximum prices at the same time. With regard to other crops, particularly sugar beets, flax, forage, beetroots, onions, and other coarse horticultural products, it was announced that measures were in the course of preparation under which the financial profits of these crops would be below those for the cultivation of foodstuffs which could be used for home consumption; and on December 10, 1917, the Minister made similar statements with reference to crops for export and to crops not of prime necessity. In this regard, therefore, the price policy would coöperate in regulating cultivation.

The maximum prices per 100 kilos at which the Government was to take over agricultural produce were fixed as follows on August 14, 1918: winter and summer wheat, 25 guilders; spelt, 23.50 guilders; rye, 26 guilders; oats, 20 guilders; hill-oats, 18.50 guilders; winter barley and four-row summer barley, 20 guilders; two-row summer barley, 21 guilders; buckwheat, 35 guilders; canary seed, 25 guilders; peas (all sorts), 34 guilders; field beans, 26.30 guilders; wild beans (all sorts), 32 guilders; linseed, 40 guilders; rapeseed, spring rapeseed, and gold of pleasure seed, 45 guilders; blue moonseed, 60 guilders; yellow mustard seed, 35 guilders; brown mustard seed, 50 guilders; caraway seed, 45 guilders; onions, 8.50 guilders; and potatoes for table use, grown in clay, sand, or moor, and delivered in the autumn of 1918 and the spring of 1919, 6.50 guilders. The maximum prices for the fodder crops per 1,000 kilos were fixed by the decree of August 5, 1918, as follows: beetroots and mangelwurzels, 15 guilders; kohlrabi and Swedish turnips, 14 guilders; turnips, 10 guilders; and horse carrots, 16 guilders.

Although unconnected with the harvest of 1918, we may here mention two measures which were, or at least began to be, carried into effect during this year: the establishment of the Rapeseed Bureau and the adoption of the Act for breaking up grassland. When the provision of fats began to encounter great difficulties, it was decided to encourage energetically the cultivation of rapeseed on broken-up grassland, and the coöperation of the Sugar Union was invited to promote this through its agents. For this purpose, the union established the Rapeseed Bureau, with headquarters at Rotterdam; and it concluded contracts on behalf of the Government for such cultivation on parcels of grassland broken up after June 15, 1918. The growers received a premium of 450 guilders per hectare, three hundred of which were paid before October 1, 1918, and the balance within a month after delivery of the seed, with the understanding that fifteen guilders would be withheld for each 100 kilos short of 1,000 kilos per hectare. Upon delivery of the harvest, moreover, the growers were to receive an extra fifty guilders for every 100 kilos of very dry seed of good quality. This regulation was established by the decree of June 4, 1918. On August 22 the cultivation was again encouraged by an announcement in the *Staatscourant* to the effect that the area would be deducted in full from the number of hectares of the farms whch were to be obliged to break up grassland. The result of all these measures was that over 9,000 hectares of such land were made available for the cultivation of rapeseed, the areas in the various provinces being as follows: Groningen, 1,790 hectares; Friesland, 731 hectares; Drenthe, 56 hectares; Overijssel, 506 hectares; Gelderland, 634 hectares; Utrecht, 335 hectares; North Holland, 1,033 hectares; South Holland, 1,116 hectares; Zeeland, 1,032 hectares; North Brabant, 1,242 hectares; and Limburg, 599 hectares. These figures indicate the cadastral areas; the total amount sown was probably about 8,300 hectares. Various plots were broken up which did not prove well adapted for the cultivation of rapeseed, and since the young plants suffered much from insect pests, etc., in some areas, a rather larger percentage of the crops was a failure; but as the land had thus been cleared, it was sown with other foodstuffs. Owing to the unrestricted submarine warfare, imports of foodstuffs from overseas had ceased almost entirely, so that the Netherlands was forced to depend altogether upon the products of its own soil. This caused the Minister to introduce a bill under which, by virtue of rules to be laid down by administrative decree, he was authorized to order certain grasslands to be ploughed up and to issue orders as to their cultivation. This proposal was extremely drastic, since it abrogated existing agreements and contracts and curtailed the liberty of agriculture more radically than any other measure. As this interference was not only justified by the circumstances, but, in the opinion of many circles, was absolutely necessary, the bill was passed by the States General and placed on the Statute Book on July 27, 1918; and the Royal Decree of November 13, 1918, established the rules for carrying the Act into effect. The grassland was registered by municipal agricultural commissions whose activities were controlled by the directors of the provincial production bureaus, which had replaced the cultivation commissions. The chiefs of these bureaus supplied the Minister with a statement of the grasslands which were adaptable in their official areas, and the Minister then fixed the number of hectares to be broken up in each province. The directors now determined how many hectares must be ploughed up in each commune of their province, and the municipal agricultural commissions drew up a plan for the apportionment of these areas among the various agricultural enterprises in their communes. This scheme was open for the inspection of those interested, and within a fixed period they were entitled to lay their objections before the agricultural commission, which then set the scheme in operation, whether amended or not. It was next sent to the director concerned who thereupon imposed the obligation of breaking up grassland. The lists of the plots of such lands were again open for inspection in the commune concerned. If some one was of opinion that he had been burdened unjustly or too heavily, he could have recourse to a commission of appeal instituted for each province by the Minister.

During this procedure, the situation had changed somewhat for the better, so that the Minister was able to designate only 58,000 hectares to be broken up instead of 100,000 as originally intended. Of these, about 29,600 hectares had been broken up on February 15, 1919, the areas in the various provinces being as follows: Groningen, 3,000 hectares; Friesland, 4,500 hectares; Drenthe, 1,800 hectares; Overijssel, 2,500 hectares; Gelderland, 3,500 hectares; Utrecht, 1,500 hectares; North Holland, 3,600 hectares; South Holland, 3,700 hectares; Zeeland, 1,500 hectares; North Brabant, 3,600 hectares; and Limburg, 1,000 hectares.

Although peace had not yet been concluded, fighting had ceased and was unlikely to be resumed. Under these circumstances the date for ploughing up grasslands was postponed on February 25, 1919, from March 15 to December 1, 1919, and subsequently those grasslands which had not yet been broken up were struck off the register.

4. *Horticultural Products.*

The regulations regarding vegetables and fruit were about the same as in 1917. In order to control the export of horticultural seeds, it was necessary to determine the quantities of stocks available, as well as the volume of cultivation. Since the existing data were inadequate for the purpose, the registration of seeds with the Government Seed Bureau (which had replaced the Central Seed Union after June 1) was made obligatory with regard to all horticultural seeds. Unregistered seed was to be commandeered at the beginning of the harvest, transportation being permitted only if covered by a permit issued by the Government Bureau. As a result of these measures the major part of the stocks was offered for registration, a general survey being thus obtained. It now became evident that enormous quantities of old seed were still held in stock in the Netherlands. Furthermore, data were required from home consumers which gave approximate figures regarding domestic needs. The next step was fixing the quantity of seed which had to be reserved for home consumption. For this purpose, a quantity of seed of the best quality was judged necessary, but it was twice as large as the statements made by the consumers. Moreover, after consulting the largest exporters of seed, prices were fixed which were reasonable in every way. After this, the amounts were indicated which could be considered for export, and for which transport permits were issued. Under the regulation for 1918, the growing of vegetable seeds was restricted to 70 per cent of the average during 1913, 1914, and 1915; when, however, it was found that the cultivation of seed could be much reduced without jeopardizing home requirements, it was proposed to limit the 1919 harvest to a much greater extent. This restriction, however, was not included in the general cultivation regulation of December 5, 1918, but was fixed by a special decree dated January 3, 1919. The execution of these requirements was to be entrusted to the Government Seed Bureau.

These rulings, however, together with the general cultivation regulations, were abrogated by the decree of March 17, 1919, so that the cultivation of horticultural seeds for this year was unrestricted.

5. *Meat.*

The distribution of pork ended on March 25, when only 2,000 pigs had been delivered during the preceding week. Henceforth, the pigs were destined for the factories of standard sausages. The registration of government pigs ceased by the middle of May; and pigs were then taken over by the Bureau for Cattle and Horses, which commandeered also at the markets. On February 20, 1918, the Government fixed maximum prices of meat (1.30 guilders per kilo for cuts) which were calculated on the basis of the butcher's purchasing price of about 1.25 guilders. This, however, caused a considerable divergence from the level of the market costs, so that the butchers were unable to sell at the maximum prices, while the army, which did not even receive offers of 1.25 guilders per kilo slaughtering weight, proceeded to commandeer cattle, thus making the situation still worse. The butchers gradually resorted more and more to the purchasing of expensive cattle, but this rendered it impossible for them to supply cheap meat. By the Slaughtering Act of February 23, 1918 (*Staatsblad* No. 133), it became possible to prohibit the slaughtering of horses, cattle, sheep, and pigs and to establish rules to regulate it. The Minister of Agriculture thereupon promulgated a prohibition against slaughtering, on March 2, though a general dispensation was granted not only with regard to cattle and sheep, but also, in case of forced slaughtering, with regard to pigs. On March 12, maximum cattle prices were fixed, these varying by three Netherlands cents per kilo according as the animals were sold at the stable or on the market. The Cattle Union established an office for the purchase of cattle and this began operations on March 18 by commandeering the cattle brought to the Amsterdam market for slaughter; commandeering was resorted to in other markets as well, and a direct supply of cattle was set on foot with the assistance of the agricultural organizations.

On March 25, a fresh prohibition against slaughtering was promulgated, though exemptions were again granted with regard to cattle (excepting cows in calf and young heifers) to be killed for the army and for those delivered at the instance of the Government Distribution Bureau. As before, the burgomasters were authorized to issue the dispensation; and this was frequently done in countryside communes on condition that all fat and offal were handed over in accordance with the distribution regulations regarding the fat of slaughtered animals. Soon after the first instalment of the weekly meat-ration of two ounces per person, introduced on March 25, the standard sausage, which was to make possible the standard-price system, became the only meat provided by the Government. Notwithstanding the fact that a decree of April 6 limited the burgomasters' power to grant exemptions from the prohibition of slaughtering to the indispensable requirements of meat for patients in hospitals and lunatic asylums, too few cattle were supplied, so that even sausage could not be provided in adequate quantities. The period of complete prohibition of slaughtering (including horses) was to constitute the transition to a distribution of cheap beef; but in consequence of the high cost (40,000,000 guilders annually), this was postponed and finally dropped. In order to impede smuggling and fraudulent slaughtering, a transport-prohibition on all cattle was issued on July 13.

After September 5, the maximum prices for all cattle were withdrawn, and cattle were placed at the disposal of the communes at such prices and at the weekly rate of two ounces *per capita*. The Government Bureau for Cattle and Horses, which had replaced the Cattle Bureau, proved, however, incapable of regularly supplying the cattle required, the situation being accentuated by placing a part of the meat at the disposal of the authorities for refrigeration. The new Distribution Regulation of November 18 was withdrawn by the Minister on December 19, 1918; and rulings for distributing the meat of new-born calves were issued on April 9, 1919.

6. *Dairy Products.*

Butter.

A small amount of butter could still be exported in January and February, because during the winter of 1917-1918 the summer butter which was stored in the refrigerators, about 5,000,000 kilos in all, was placed at the disposal of the authorities for home consumption, this amounting to 100 per cent of the output from February 10 to December 31, 1918. Under the decree of April 6, by virtue of Article 8 of the Distribution Act of 1916, producers and wholesale dealers were prohibited from supplying butter to the consumers and also to other than their regular customers, and were forbidden to deliver larger quantities than usual; while retail dealers were restrained from furnishing butter to other than their usual customers in amounts exceeding one kilo at a time. As there were indications that some producers still continued to sell large quantities, the delivery of butter in amounts exceeding one kilo was prohibited except at the direction of the Butter Union or by special dispensation. This union (subsequently transformed into the Government Bureau for Meat and Fats) appointed certain persons to collect butter.

In view of the unfavorable position of the country in regard to fat, a rationing system was introduced after June 3 which included butter, and cards were furnished making available a weekly allowance of 250 grams *per capita*, the time-limit being extended to ten days after July 6. In the frontier regions, the exorbitant prices which smugglers paid for butter had already encouraged the withholding of butter which should have gone into the collection for home consumption. More and more cattle breeders proceeded to churn milk themselves, and the working of the butter factories in southern Limburg was seriously disturbed. Now that the ration of fat had been reduced, however, there was an increasing and general temptation for those who had not joined the Butter Supervision Stations, and whose production, therefore, was not supervised, to sell their butter secretly outside the official collection and at high prices. This led to the promulgation of a prohibition on churning, by virtue of which the preparation of butter was forbidden after August 5, the granting of exemptions being subject to stringent conditions. The principal requirement was that the entire output of butter was to be delivered to the Government Butter Collection with the exception of the quantity released by the Government Office concerned in order to provide for the normal wants of the producer. The producers of butter prepared from the milk of cows kept by cattle breeders who had not joined a supervision office could obtain exemptions only if the milk could not be delivered to a dairy products factory or to a dairy; and this applied also to cheese farmers who made fresh butter.

Cheese.

On April 6, the Cheese Union announced to the cheese exporters that the entire output would be used for home consumption, and all cheese purchased by them after the middle of March was accordingly delivered to the central warehouses. The Minister later decreed that no export of cheese would be allowed after April 28; but despite these measures cheese remained comparatively scarce, this being due in part to the clandestine trade, though mainly to the much smaller production in 1918.

The fixing of the price of cheese was, therefore, entirely under the control of the Government Milk and Cheese Bureau; and for the summer output the price for the best grade of Gouda cheese with a full percentage of fat was 66.50 guilders per 50 kilos with the government stamp, and 65 guilders without it. During the period between July 7 and August 11, one guilder per 50 kilos was deducted to make up the 50,000 guilders which the South Holland region had still to contribute for the provision of milk in 1917.

For their services as commission agents to the central warehouses, the cheese dealers were paid two guilders per 50 kilos. The trade received weekly instructions regarding the quantities it was allowed to buy, what part of the purchases was to be sent directly to the central warehouses, and how much must be stored for the winter. For the latter stock, the dealers subsequently received 86.50 guilders for first quality Gouda cheese with the government stamp, and 84.50 guilders without it. To ensure an equitable division of the available cheese, measures were adopted by which the Government Bureau for Milk and Cheese would be able to control all the cheese produced. In the first place, a regulation was introduced so that only those who had been registered were able to buy cheese from the producers or could supply it as producers to this Bureau, while in connection with this ruling the transportation and delivery of cheese were temporarily prohibited after May 26, though certain specified exceptions and transport permits were granted. One kilo was the maximum quantity which the retail trade was allowed to transport and to supply the consumers outside these restrictions.

After June 7, registered dealers could resume the purchase of cheese. Since, however, the results did not come up to expectations, and since a considerable quantity of cheese was delivered and transported secretly from the farms, the Minister decided to forbid the making of cheese from milk after August 20; and at the same time the prohibition of transportation and delivery of cheese was somewhat extended. The system of granting exemptions sought to collect the entire production of cheese in the interests of the general distribution. On May 25, the Government announced its intention of introducing the rationing of cheese at an early date. For this purpose, it was henceforth to be supplied exclusively to the municipal administrations which ordered it from the Government Distribution Bureau, and one-quarter of a kilo was supplied biweekly per person, the first apportionment being for the fortnight of June 3 to 17.

Milk.

In addition to the general statements already made regarding milk, we may note that a summer price of thirteen Netherlands cents per liter at the farm was fixed for the period from May 1 to October 31, and a winter price of eighteen cents for the period from November 1 to April 30, 1919, those enterprises which had customarily supplied milk in previous years being required to continue to do so. The bonus for the summer was reduced to one and one-half Netherlands cents per liter in the former first milk zone and to one cent per liter in the former second milk zone, and that for buttermilk and skim-milk was lowered to two and one-half cents. For the winter, the bonus for milk, skim-milk, and buttermilk was fixed at a maximum of five and one-half cents per liter. The retail price of milk per liter from May 1 to October 12 was seventeen cents, eighteen cents until November 1, and then twenty cents. When, during the summer season, the quantity of milk in any commune fell below that which corresponded to a daily consumption of four-tenths of a liter per person, the deficiency was made good by factory milk supplied under orders from the Government Bureau for Butter and Cheese.

In view of the scarcity of fats, the rationing system was strictly applied during the winter season on the daily basis of two-tenths of a liter of milk per person; but since the milk for children and for the sick had first to be deducted from this quantity, healthy adults could not count on more than a daily ration of one-tenth of a liter per person. Milk was actually supplied by the card system; and to supplement these small quantities two-tenths of a liter of skim-milk or buttermilk was distributed so far as possible, while skim-milk powder and condensed milk were included in the distribution of provisions.

The regulation of extraordinary deliveries of milk was mainly controlled by the regional commissions of interested parties which formed the branch offices of the Government Bureau for Milk and

Cheese, which was itself in charge of the general management and which sent the applications for milk to the branch offices concerned. There were five such offices, *viz.*, at Leeuwarden (for Groningen and Friesland); at Zutphen (for Drenthe, Overijssel, and Gelderland); at Hoorn (for North Holland); at The Hague (for Utrecht, South Holland, and Zeeland), and at Roermond (for North Brabant and Limburg). Compensations were paid from the butter premium for damages suffered in the trade, freight, etc.

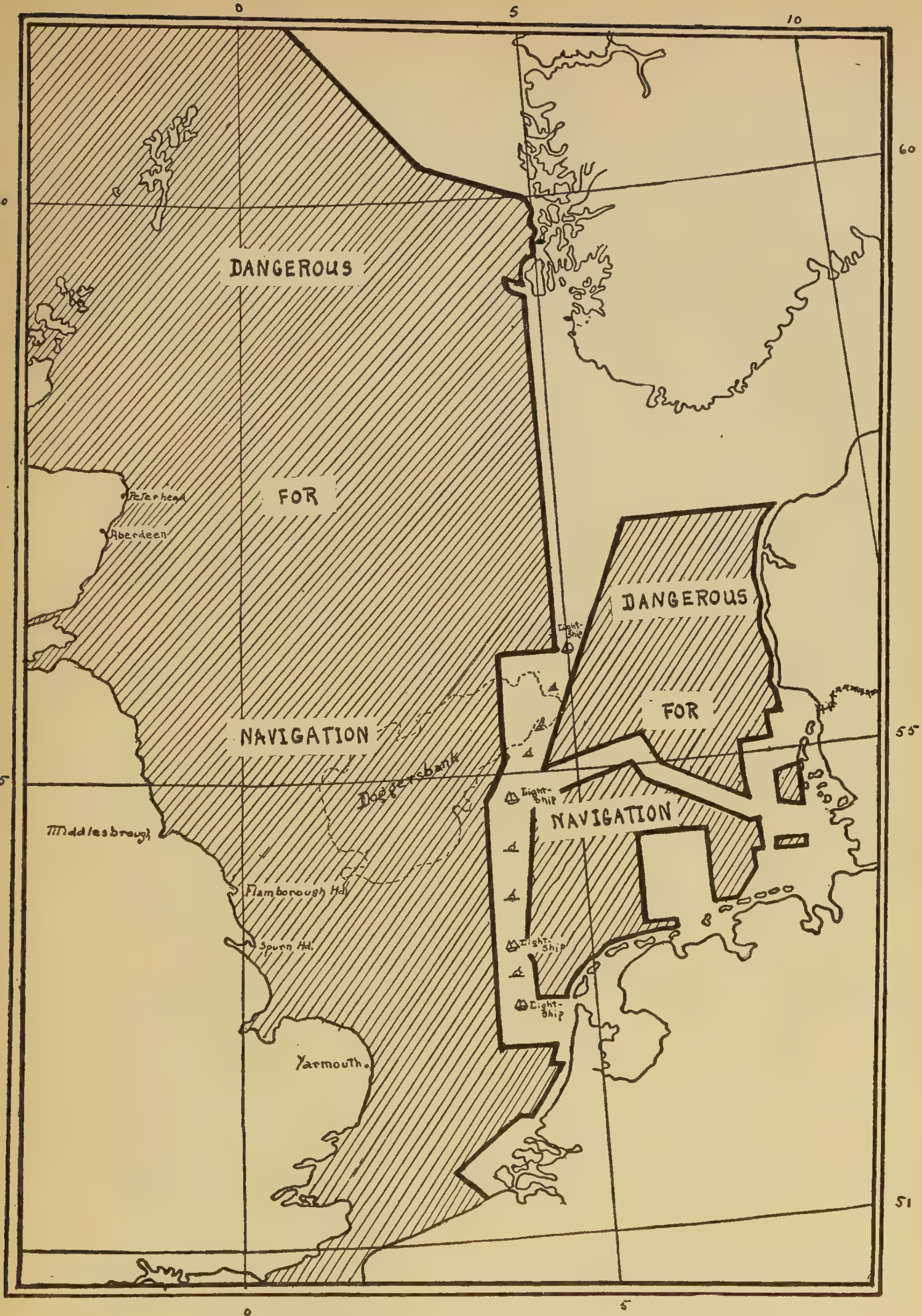
GENERAL SURVEY

Our synopsis of the measures taken by the Netherlands Government for ensuring the food supplies of the country will, we trust, enable the reader to picture to himself, at least to some extent, the difficult situation in which the Great War placed the neutral Netherlands in the midst of the belligerents. We say "to some extent" advisedly, because we have discussed merely a part of the crisis-régime of the Netherlands Government, and have considered only a very limited number of commodities which demanded their attention. If all these were enumerated, and if every regulation for each one, with each repetition and change—usually in the direction of increased stringency—were listed, this alone would require an extraordinarily large proportion of our available space. This is clear from the list of export prohibitions promulgated in the Netherlands, which list has been published in a booklet, of which it fills 89 pages. The variety of commodities there enumerated speaks for itself. This limitation, though considerable, spares the reader a dry summary of measures which were often similar; and it seems more useful and more in keeping with the aim and purpose of the series, which will include these notes on the Netherlands, to elucidate the difficulties involved in the three problems confronting the Netherlands Government and enumerated in the Introduction.

1. *The Supply of Raw Materials.*

Only a few of the raw materials which are indispensable for the economic life of the Netherlands and for the supply of which she depends upon imports from abroad, have been mentioned in the preceding pages. Besides those which were required by agriculture, there was a multitude of others which were necessary for the various branches of industry so as to carry on and hence to be able to provide for the demand for the most heterogeneous industrial products, as well as to exorcise the specter of unemployment. From the very beginning of the Great War, therefore, not only the circles directly interested in commerce, shipping, industry, agriculture, and fishing, but also, and above all, the Government, gave its fullest attention to the problems dominating the supply of raw materials. The neutrality of the Netherlands was not a shield which could ward off all the evil chances of the War. Her importations were greatly hampered by the radical change in the relations between supply and demand. There was no longer any question of world-market, world-production, world-consumption, or any approach to a system of distribution organized by world-commerce. All this vanished when international intercourse, the apparatus for that organized distributive system, was dislocated.

Whereas it was possible at first to obtain a little here and there, several factors soon rendered it necessary to be content with what could be imported by sea with great difficulty. From the Continent, very little was to be expected. The difficulties attending the importation of goods from across the seas, which were far from free, became only too evident during the war period of 1914-1918, especially to those countries which were situated in the immediate vicinity of the hostile powers. The fact that the belligerents and many neutrals took various measures to keep necessities within their own boundaries was not the only obstacle to the importing of goods. In the case of the belligerents, moreover, the fact had to be taken into account that industry was made more and more subservient to carrying on the War and that the national production was linked up particularly with provisioning armies and fleets. Owing to the augmentation of the fighting forces, the supplies of labor for the various branches of industry decreased. This easily explains the reduction of the output of many articles and the decline of a number of centers of production which were important for world-consumption. Whereas, for a country like the Netherlands, this greatly reduced the chances of receiving commodities which formerly had been constantly imported, the fact that almost immediately after the commencement of hostilities the ocean ceased to be the free, and espe-



Post-war situation in the North Sea

From a circular of the Chief of Fisheries of December 24, 1918

cially the safe, route for the supplies needed in the Netherlands, forced her to produce what she had been in the habit of purchasing abroad.

A glance at the map shows the so-called "free fairway" in the North Sea, giving access to the Netherlands ports from the Atlantic round the north of England and between the mine fields in the North Sea, and easily explains the fact that navigation, which was indispensable for bringing supplies to the Netherlands, was bound to be much restricted. The belligerent powers, in adopting various economic measures, aimed exclusively at damaging and weakening each other, but in so doing they could not avoid harming the neutrals, thus injuring the Netherlands as well. In this connection, we need merely mention what could gradually be included in the notion of "contraband" and note in passing that the establishment of the Netherlands Overseas Trust Company, Ltd., proved necessary to ensure to the Netherlands the supply of certain quantities of contraband goods. The supplying of the blockaded neutral Netherlands with the necessary imports was one of the most difficult problems that confronted that country.

At the beginning of the War, the Entente Powers took the view that merchandise which they had declared contraband, even when it originated from neutral countries, could be allowed to pass if they received adequate guarantees that the goods were destined for consumption in the neutral country importing such commodities. When, as is well known, the Netherlands Government stated that both on account of their interpretation of international law and because of their treaty obligations they were neither prepared nor entitled to give such guarantees, the Entente Powers declared that they were ready to accept the guarantees of the private institution just mentioned, the Netherlands Overseas Trust Company. Primarily, these guarantees of neutral destination and consumption were required only in respect to goods included in the contraband lists of the powers concerned, *i.e.*, at first for a limited number of articles. Gradually, however, entire series of commodities were added to those lists and it was required that the guarantees of the Netherlands Overseas Trust should apply not only to the goods themselves, but also to the articles manufactured from them. Consequently all oversea imports, including those from the Netherlands' own colonies, had, with only a few exceptions, to be covered by the guarantees of the Netherlands Overseas Trust. As the War went on and hostilities grew more intense, the supervision of the imports into the Netherlands from overseas became so exceedingly severe that no merchandise was permitted to pass before determining the quantities which could be claimed by the various groups of interested parties in the Netherlands, the maximum allowed being just enough to cover their normal consumption.

Since some special arrangement had to be made for almost every commodity to determine the quantity of imports claimed, and since the Netherlands was rationed by the Entente Powers which supervised her oversea importation, there was obvious reason for recurrent stagnations in supplying various industries, especially as the Entente, pending negotiations respecting the rations to be established, put an entire stop to the arrivals of commodities, irrespective of their origin. To this was added the difficulty which many establishments experienced from the fact that Netherlands Overseas Trust goods which had already reached the Netherlands were sometimes detained for months and either could not be delivered to the consumers or were so delivered only after a long delay owing to objections from the Entente; while other goods were not only not delivered, but were taken before prize-courts to the grave prejudice of commercial and industrial circles. Obviously, then, the question of importation was many-sided and often very thorny. It is not surprising, therefore, that, although the Netherlands Overseas Trust Company operated very efficiently as an intermediary institution under the existing circumstances, and although, managed with extraordinary skill, it proved of inestimable value to the economic life of the Netherlands during the War, yet the situation of the Kingdom as a neutral country between belligerent powers required the constant vigilance of the Government. In the meantime, notwithstanding the favorable results which the activities of the Netherlands Overseas Trust were able to obtain for the trade and industry of the Netherlands, complaints of stagnation were the order of the day, since many commodities were unobtainable, a situation which obviously was bound to exercise an adverse influence on economic life. Although it was not always possible to obviate the difficulties which gave rise to these complaints, negotiations led to some improvement in many cases.

The extremely rigid control of the imports from overseas was combined with an equally keen supervision of the Netherlands maritime trade. The disorganization of international shipping after the outbreak of the War made the Netherlands almost entirely dependent upon her own commercial fleet for transmarine importation. This fact will explain the reason why the Netherlands Government, considering the position outside their frontiers and the question of food supplies which pressed itself upon them, proceeded to promulgate the bill for commandeering ships (*Staatsblad* No. 211 of 1917). A calculation of the tonnage which thus became available to the Government for importing purposes showed that, despite the utmost economy, it could satisfy only part of the demand for cargo space. Obviously, therefore, the demand of the Allied Powers for shipping space in exchange for bunker and other coal was bound to exercise a very unfavorable effect on the Netherlands problem of importation. Taking this into account, we scarcely need to expatiate upon the measures taken by the Central Powers with regard to the transport of goods by merchant vessels. Their lists of contraband, like those of the Allies, had lengthened; and this increased the risks of torpedoing or capture for many Netherlands vessels, thus augmenting the perils of maritime transportation, which the mines had already rendered very considerable. Obviously, each Netherlands ship torpedoed exercised an immediate counter-effect on the supplies of her industry; and the same was true of every ship taken to a belligerent port. Besides the loss of various sorts of commodities this also meant loss of tonnage which could not immediately be replaced by building new vessels. However, it was not only with regard to imports from overseas, that the Netherlands' economic dependence was demonstrated more clearly every day. Overland imports, too, were impeded, being affected by the measures taken by the Central Powers regarding both exports and transit traffic, since their prohibitions prevented the importation of goods necessary for Netherlands trade and industry from or through their territories. The manifold disadvantages, arising from the various foreign measures mentioned, manifested their prejudicial effect on the economic position of the Netherlands, *inter alia*, in reduced activity and sometimes increased unemployment; diminished exports; temporary and probably permanent loss of foreign markets; languishing transit trade; lessened activity in ports; declining traffic by inland waters and railways which used to feed the traffic from and to the Continent; hard and precarious times for a large part of the population; and collapse of the flourishing foreign and colonial trade of the Netherlands.

We may now consider the adverse influence on various branches of trade and industry in the Netherlands somewhat more in detail before showing how the Government tried, at least so far as possible, to cope with the difficulties that arose.

The question of coal supply was very serious. Although this greatly increased the domestic output, yet without a regular and ample supply of foreign coal the various branches of industry could not carry on, and it was, moreover, impossible to ensure a stock for household fuel. The negotiations regarding supplies both from Germany and from England finally led to a result which is dealt with elsewhere in this series.[2] Much inconvenience was caused by the impediments which prevented a regular American supply of lubricating oils, petrol, gasoline, kerosene, and other commodities which were indispensable for various industrial enterprises and for which substitutes could seldom be found. Certain quantities of these were indeed shipped to the Netherlands, but they were so small that, as for a series of other commodities, a system of distribution became absolutely necessary, and an organization was created to deal with this situation.

A great many more or less serious industrial disturbances resulted from the longer or shorter delays in the arrivals of various raw materials. These were especially grave for the cocoa, leather, cotton, and jute industries, as well as for the soap industry. This was due to the extreme prolongation of negotiations which had to be carried on with the Entente regarding the activities first named, and both with the Entente and with the Central Powers respecting the soap industry with a view to framing a glycerine agreement. Other branches of industry were likewise faced with the entire cessation of importation of their raw materials, these including such establishments as required special articles made of rubber and others which needed electrotechnical materials. To illustrate the consequences of this, we may mention that the Netherlands experienced a serious shortage of surgical gloves which was very detrimental to the service in various hospitals.

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[2] See the article on the problem of supplying the Netherlands with coal during the Great War.

Since the importation and delivery of raw materials had stopped, there was, furthermore, a temporary stagnation in the industries working kapok, cork, and asbestos, and also in the manufacture of candles, as well as in lacquer, varnish, paint, and rubber works. The entire cessation of the imports of tires was a heavy blow to motor and bicycle factories. Although the home industry could be expected to do its utmost to meet the demand for tires for automobiles and bicycles, one could not count on fully covering domestic requirements, at least within a reasonable time. A commission charged with the distribution of tires was, therefore, created. The plaiting works, the brushworks, the rope industry, and the linen textile activity were for months deprived of raw materials, which, although they had in part long been purchased and paid for, were not released or delivered, much to the disadvantage both of owners and of consumers.

Although various other commodities had long been necessarily consigned to the Netherlands Overseas Trust, tobacco, coffee, and cinchona bark remained on the free list until the requirement was extended to tobacco and coffee. Whereas at first it was still possible to export raw tobacco and cigars, this was forbidden when it became evident that the cigar and cut-tobacco works would run short of stocks, and an organization was created to regulate the distribution of tobacco to the industry and to check clandestine trade in this raw material. The same officials were, furthermore, placed in charge of a distribution regulation of cigars for home consumption and of framing measures for export wherever this could be permitted. This arrangement, however, proved unnecessary, the armistice rendering it superfluous. The coffee and tea trades were much injured by the fact that considerable consignments of these important articles of consumption, which had arrived long before, were detained for an excessive length of time. The existing retail sale organizations as well as the coffee-roasting factories suffered a great deal from this, and the rise in prices due to the increasing scarcity was painfully evident to the poorer classes. Arrivals of coffee were rationed, exports were prohibited, and to counteract the inflation of prices, as well as to attain an equitable distribution of what was available, and might come in later on, a distribution regulation was made and put in operation by an organization called the "T.K.D." to indicate the Government

Bureau for Tea and Coffee (*Rijkskantoor voor Thee en Koffie*) at Amsterdam, which included advisory commissions for: (a) tea, (b) coffee, and (c) substitutes for tea and coffee.

Difficulties similar to those here briefly mentioned arose in the case of a great many other commodities. The iron and steel industries, in particular, which were dependent on Germany for their raw materials (a large variety of commodities and special articles), had to face almost insurmountable difficulties. A period of very serious and prolonged stagnation, during which a solution was constantly sought by way of negotiations, has caused very serious damage to these trades, and in this connection shipbuilding activity need only be mentioned. In the tin industry, the position was better, since it was possible, with the energetic coöperation of the Netherlands Overseas Trust, to make arrangements for importing and distributing the requisite raw materials. Obviously, the cessation or even the serious limitation of imports and the delay in delivery of many articles of commerce, such as raw and auxiliary material for industry, agriculture, fishing, and government works, manufactured articles for consumption in the Netherlands and articles of food and fodder, very soon caused scarcity and consequent dearth in regard to those commodities as well as to the articles manufactured from them.

The Government was thus obliged to regulate prices, not only for many articles of daily consumption, but also for various raw materials and auxiliary goods for industry. The fixing of prices, in fact, was one of the forms in which the Government embodied their measures for insuring, or rather, for maintaining economic life, though such regulations were not necessary for various wares which came from abroad under the auspices of the Netherlands Overseas Trust. The conditions on which those interested obtained these commodities from the organizations created for the purpose were such that the possibility of clandestine trade was well nigh excluded.

If, nevertheless, some interested parties—commercial firms or manufacturers—lost sight of national interests, and from selfish motives acted in contravention of the import terms, they were severely punished in accordance with terms to which they had agreed beforehand. The means for maintaining correct relations and also for ensuring further possible imports, even though restricted, consisted in the infliction of heavy penalties which were covered by bank guarantees and also in the exclusion of guilty parties from any further intermediation of the Netherlands Overseas Trust on their behalf. It was not surprising, therefore, that clandestine trade always manifested great interest in articles which at first were uncontrolled; and thus that trade itself frequently paved the way for intervention, causing an embargo on what had still been unrestricted.

If, as has been outlined above, trade and industry experienced very great difficulties from the impediments placed in the way of importation, agriculture and horticulture suffered from the lack of cargoes of artificial fertilizers and of pyrites for the manufacture of sulphuric acid and of fertilizers, and fishing also was much hampered. For a long time, this occupation was unable to meet its requirements in nets, catechu, and other materials which it had formerly received from Great Britain. When it is also remembered that arrivals of salt were much impeded by measures taken both by the Entente and by the Central Powers, we need scarcely enlarge on the depression in this trade, which is so important for the popular food supply.

Summarizing the situation, and considering simply the extraordinary variety of commodities and articles of commerce which required, and even demanded, government attention and regulation, there was at last scarcely anything which did not need some ruling for importation, exportation, or distribution. In this connection it may be said that the neutral Netherlands, owing to the consequences of the economic blockade which formed part of the war measures applied by the Entente against the Central Powers, had much to suffer from the War; and that the counter-measures taken by the Central Powers likewise affected her.

While, as we have seen, imports from overseas were effected mainly through the mediation of the Netherlands Overseas Trust, and while even goods consigned to the Government ultimately entered the country in the same way, the Commission for Commercial Traffic with Foreign Countries took charge of importations from the Continent. The Sub-Commission for Industry of the Royal National Relief Commission, usually known as the Industries Commission, was, as its name indicates, chiefly occupied with the interests of various branches of national industry and contributed its share toward removing the greatest possible number of the manifold obstacles that industry had to face.

Next to these organizations of primary importance, which were, and in the national interest had to be, in constant contact, circumstances repeatedly forced the creation of special bodies which had to devote themselves to particular interests. In our survey of the question of the food supply we have already mentioned the Government Bureau for the Distribution of Grain and Flour, and the Artificial Fertilizers Commission. The Government Coal Distribution Bureau, like these, was instituted by the Government, and the Iron and Steel Commission was established in the interest of the iron and steel works; while the Government created the Soda Commission for the benefit of the very great number of industries which required salt of soda and caustic soda as raw or auxiliary materials.

If we here append a few further details regarding this commission, it is not because it performed its task better than any other such crisis-organization, but simply to illustrate the field of operations which came within the purview of such a group. This commission, indeed, was not instituted merely to promote the importation of the two articles named, but also to distribute them. All establishments which for any purpose needed either salt of soda or caustic soda—and these included the most heterogeneous branches of industry—were necessarily comprised in its plan of distribution, and at the same time it was obliged to take into account the requirements of these commodities for purposes which were quite outside industry, such as hospitals. Since the Netherlands does not produce these two important chemicals, when the commission had to conclude contracts for delivery outside the land frontiers, it was obliged at the same time to keep a close watch against any contravention of the conditions of the Netherlands Overseas Trust. Inspectors had, therefore, to be appointed, and violations of the conditions had also to be guarded against by the bank guarantee system already mentioned. It thus proved possible to maintain activity not only in the glass, soap, soap-powder, and crystal soda industries, but also in the textile and margarine works, in the dairy trade, and in various other industrial enterprises and public utility establishments in so far as they were not handicapped by lack of other raw or auxiliary material, so preventing unemployment and aiding public health by the promotion of cleanliness.

The Wool Commission, the Glycerine Commission, and the Soft Soap Commission were also highly important. Of the Wool Commission we may, for example, say that it not only did its share to insure supplies of raw wool for industry, while the Netherlands Overseas Trust again acted as the intermediary for importing foreign wool, but in so doing the commission also made it possible to regulate the distribution of worsted, which proved a great benefit, especially for the poorer classes.

The problem of importation became more and more intricate in the course of years, as was also the case with the system of distribution connected with it, the latter being rendered still more difficult since the belligerents placed large numbers of firms on the dreaded "black lists." This made it necessary to multiply crisis-institutions, and not only did the Government create such bodies, but the Netherlands Overseas Trust also was obliged to do so in consequence of its growing tasks. Special divisions were formed by it for various important commodities such as linseed, hides and tanning materials, fats and oils, coffee, tea, tobacco, etc., while a separate department was organized for the middle classes since they imported these articles from overseas.

The complicated interests involved in importation, as contrasted with the relatively great scarcity of shipping space, caused the Government to promulgate the Ships Export Law (*Staatsblad* No. 139 of 1916, and *Staatsblad* No. 427 of 1918). With the aid of the Ship-Clearing Bureau established for the purpose, and in coöperation with the Industries Commission, an influence could be exercised on imports of goods from overseas; and the importance, in this connection, of the Law regarding the Commandeering of Ships has already been mentioned.

2. *Regulation of Exports.*

Leaving the matter of imports, and proceeding to deal with the question of the regulation of exports, we may first point out, in passing, that it would be necessary to enumerate a great many organizations, and to describe the particular nature of the task of each, if we were to offer an approximately complete picture of the effect of their operation upon the measures adopted by the Government regarding exports. The list of export-prohibitions already mentioned seems sufficiently eloquent in this respect. For a clear perception of the meaning of these measures, the main point was that when the Government considered the question whether exportation of a certain commodity must or might be prohibited, it had in the first place to decide whether home requirements rendered it necessary, and, secondly (at a later stage of the War) whether the Netherlands dependence regarding imports from overseas did not force her to restrict exports also in case the home production of any article exceeded the domestic requirements, thus leaving a surplus for exportation. This latter problem, it is superfluous to remark, repeatedly complicated the neutrality problem and thus required constant vigilance, leading in each particular case to the effort to reach some arrangement which would obviate accusations from either of the belligerent groups.

The execution of the almost endless list of export prohibitions naturally demanded a close supervision of the land frontiers and caused a drastic restriction of traffic in the frontier regions, since transportation was forbidden along various roads, and the staff in charge of the control of traffic in these areas was greatly increased. While the export prohibitions were absolute in many cases, in others they were combined with export regulations by which, under certain conditions, permits could be obtained from bureaus specially indicated for the purpose.

In the Netherlands as everywhere else, including the belligerent countries, there was some risk of dishonest practices; and this caused the Government to proceed with great severity against those who misconducted themselves in this respect, and to oppose particularly the trade in export permits (rightly called "the export-permits swindle") thus preventing self-seeking individuals from jeopardizing the interests of the population as a whole. This entailed a very extensive task. At first, the supervision of the issuance of export permits had been instituted mainly by the Industries Commission already mentioned, but gradually this control was extended and made more efficient. By rendering it possible to grant export permits, the Government acted in the interests of such business circles as would be adversely affected by interdictions of this character. In order, however, to prevent an excessive use of the permits, and thus to retain an oversight of what had to remain available for home consumption, the Government instituted a number of Committees of Supervision over those associations which had been established in concert with the Government for a number of articles of export. Furthermore, the Central Commission for Food and Fodder, which had its origin in the Royal National Relief Commission, supervised applications for export permits and the allotment thereof, so far as foodstuffs were concerned. The final control in granting export permits rested with the Government and the Export Certificates Bureau instituted by them, while in coöperation with them the Commercial Section of the then Department of Agriculture, Industry, and Commerce dealt with the supervision of licenses generally.

Meanwhile, the constantly increasing intricacy of the economic position, due to the steady intensification of warlike measures taken by the belligerents, made necessary a much more drastic regulation of economic life in the Netherlands. This regulation, of which more will be said presently, also involved a revision of the system of export permits and led to the establishment of the Netherlands Export Company, Ltd., which soon became generally known as the "N.U.M." (*Nederlandsche Uitvoer-Maatschappij*). It is necessary to note this company separately in this connection, because the service of export permits was ultimately centralized in it.

This seems to be an appropriate place to mention the very special agreement which came about, under the pressure of circumstances, a comparatively short time before the armistice put an end to hostilities, and when, pending the concluding of peace, a period of transition set in which afforded hope for better times. We here allude to the well-known Agricultural Agreement concluded in London and based upon the recognition, on the Allied side, of the Netherlands special position between the contending countries. It was an Agreement which regulated further supplies to the Netherlands in connection with their output and export, and it may be said to represent the culmination of the concept of the dependence of the neutral State which found itself, as was said in war time, "between the hammer and the anvil." For a State which, like the Netherlands, was not self-supporting, and for the Government of such a State, it was scarcely conceivable that any other solution of the exceedingly serious economic difficulties which were then the order of the day could have been found. A detailed account of this Agreement would carry us too far, but its special character and the way in which it was reached entitle it to special record in a review of the war-time administration of one of the neutral States which was exposed to so much pressure during the conflict. It is scarcely an exaggeration to term the Agreement a "symptom of the period of the Great War."

3. *Crisis Regulations.*

In discussing the establishment of the Netherlands Export Company, we pointed out that the official management of economic life in the Netherlands was compelled to become more intensive. This necessity applied in particular to the Ministry of Agriculture, Industry, and Commerce; and it is not surprising that while the field of departmental operations was constantly expanding, the crisis-task of the Ministry grew out of all proportion to its ordinary duties in time of peace. The Government accordingly instituted an auxiliary committee which should be immediately subordinate to the Minister; and the crisis-management was transferred to this body, which later became the Crisis Department of the Ministry.

To give the reader, in the briefest form possible, an idea of the organization of the economic war-control of the Netherlands, a diagram is here inserted to show the principal groups centered around the Economic Department, which was sometimes, and not always incorrectly, though bitingly, called the Chaos Department, and with which they coöperated more or less directly.

To show the vast number and variety of the organizations, we may give a list of commodities and groups of them for whose production, importation, distribution, and exportation a crisis-body—whether a society, a committee, or a Government Bureau, or even more than one organization—was established by private initiative in concert with the Government or promulgated in accordance with the official crisis-régime: grain and flour; coal; clothing; building materials; bread; chemicals; chicory; medicine; surgical appliances and articles for medicinal use; vegetables and fruit; hides and leather; copper; artificial fertilizers; rags; textiles; pyrites and sulphuric acid; lubricating oil; bicycle tires; rubber; sugar; soda; tobacco; tea and coffee, and substitutes for them; peat-litter; cattle and horses; articles for lighting and kindred products; candles; kerosene oil; gasoline; water-gas; tar and tar-oils; petrol; benzol; motor-spirit and turpentine; fish; fisheries products; fish liver; herring fat and train oil; fishing tackle, etc.; flax; iron and steel; seeds; soap; soft soap; washing-materials; zinc, lead, and tin; lead pipes for supplying water to new buildings; bricks; foodstuffs; meat and fats; milk and cheese; rapeseed, fodder from grain waste; other fodder; poultry and eggs; butter; cheese; potatoes; legumes; potato-flour; milk products; hay; rennet; potato-drying ovens; clover seed; nitrogenous fertilizers; bread; flour; meal and rye; sowing seed; paper; and peat for industrial use.

We may further note that, for example, 475 fuel committees were active in behalf of the coal supply; in each province, a government commissioner was in charge of collecting grain; there were eleven provincial bread committees; each province had its production bureau, and each bureau its advisory committee; besides a Royal Fodder Bureau with its advisory committee, provincial fodder offices functioned wherever necessary; there were eleven provincial hay bureaus coöperating with the Central Hay Bureau; the service of interior navigation was apportioned among five inspectors, each with a separate district; the government butter collection was organized by provinces; the official measures for regulating prices led to the creation of various commissions; it was necessary to set up such a commission for refrigerating and cold storage plants for easy preservation of perishable foodstuffs for the people as long as possible; the distribution of foodstuffs, for which the closest possible coöperation of the communal authorities was needed and obtained, and which compelled the centralization of government efforts, led to the establishment of the Central Government Administration Bureau for such distribution; the housing problem necessitated a separate regulation, as did the supplying of Belgian frontier communes with the necessities of life; between the various organizations, and between these and the Ministry of Agriculture, Industry, and Commerce, the closest possible coöperation had to be ensured. From all this, the reader may infer the extent of the Government's intervention and the degree in which it was necessary to interfere with the unrestricted industrial life of the Netherlands; and this interference had constantly to be widened and deepened as the scarcity of all kinds of commodities became more and more oppressive.

What has been said regarding the difficulties experienced in importing goods, and concerning the effect upon production of the non-arrival or delay in arrival of raw and auxiliary materials, as well as of the non-receipt or inadequate receipt of various commercial commodities, will explain why the Government was obliged to devise means to avoid as much as possible the consequences of scarcity and dearth for large sections of the population. Commandeering and Confiscation, the name of one of the Bureaus of the Section for Crisis-Affairs in the Department of Agriculture, Industry, and Commerce, gives evidence of the stage of distress in which the Netherlands found herself in consequence of extremely defective importation. It certainly does not indicate excessive prosperity when the government of a country is obliged to use such means to regulate the distribution of all sorts of available goods among the population. No system of rationing can ever be so equitable as to escape complaints. A very great deal of rationing was necessary in the Netherlands, and, not without reason, serious remonstrances were heard.

4. *Adaptation of Production to the Needs of the Population.*

That the Government by no means restricted themselves to the mere distribution of goods produced in the Netherlands or still importable there, but also did all in their power to increase the production of the products which were most needed, partly in order to be able to obtain other indispensable goods in exchange from abroad, has, we think, been made sufficiently clear in our foregoing survey of the supplying of food for the Netherlands. Nevertheless, we may consider this part of the Government's task somewhat more in detail, because it was in this very point of its crisis-régime that it was exposed to severe criticism.

The adaptation of home production to the needs of the population was a government problem of which the solution was not restricted to agriculture or horticulture, cattle-breeding, the dairy industry, or fisheries, although these occupations, being of primary importance, were the first to be considered. Yet the solicitude of the Government neither could be, nor was, less in regard to the interests of industry. As economic distress became more intense, the measures of the Government of the Netherlands were designed to keep economic life in the Netherlands going as long as possible; to check unemployment; to promote opportunities for work; to push the importation of raw materials and, wherever possible, their production; to encourage inventions by which the greatest possible use could be made of existing economic values; and to assist a normalization which restricted the waste of materials. By maintaining close contact with the leaders of science and industry, and by keeping in view the organizations which were operating in the interests of the import trade of the Netherlands, the Government strove to attain the greatest possible results from private initiative in the interests of industrial production in that country. Coercive measures were adopted only with reluctance and events proved that this was the right policy.

Still, if the War had lasted longer, government interference in industry would certainly have become more extensive, and its intervention in, and influence on, economic life would, generally speaking, have been much more drastic in character. This may indeed be proved, since it had already become necessary to devote much attention to the problem of substitutes, because raw materials for various industries failed to arrive, and stocks were becoming exhausted. Fortunately for the Netherlands, matters did not reach that stage, for the armistice, and the peace concluded in the following year, saved her from that impasse; and the Government could proceed to demobilize its crisis-régime systematically.

V

THE COST OF LIVING, PRICES, AND WAGES

BY H. W. METHORST

V

THE COST OF LIVING, PRICES, AND WAGES

PRICES IN GENERAL

1. *The Netherlands' Position in Relation to the Belligerents.*

ALTHOUGH the Netherlands was not directly involved in the World War, she was inevitably affected by the general rise of prices in the neighboring countries, while her geographical position in the midst of the chief belligerents caused her to suffer more from the results of the economic war than any other neutral State, with the possible exception of Switzerland. Under the British Order in Council of August 20, 1914, any conditional contraband of war could be seized, not only when clearly intended for enemy forces, but even when going to hostile territory. Owing to the wider connotation gradually given to the term "conditional contraband of war" by interpreting it to mean that seizure of such goods was also permitted in case their ultimate destination was an enemy country, the entire supply of commodities to the Netherlands from across the water was in danger of being cut off little by little.

For her economic life the Netherlands depends in great measure upon other countries. In spite of her high development of agriculture and cattle-breeding which occupy much of her area, it is necessary to import—to mention only one of the principal items—large quantities of grain: about 80 per cent of wheat and barley, and 40 per cent of rye, oats being the only cereal whose home production supplies on an average more than three-fourths of the needs. Important quantities of fodder likewise come from abroad, especially maize and linseed cakes, the domestic output of which, as a secondary product of the oil industry, consumes a large amount of foreign raw materials, such as copra, ground-nuts, and both home-grown and foreign linseed. Moreover, agriculture cannot maintain its high standard unless it is regularly supplied with fertilizers or with the raw materials needed for their manufacture. The raw materials for the textile and tobacco industries and for metallurgy, to mention only a few of the leading branches of activity, are likewise imported. Finally, the home production of coal is wholly insufficient to supply industrial and domestic needs, and this was more so in pre-war times than it is now, for at present (1923) the mines of the Netherlands yield more than three-fifths of what is needed, whereas in 1913 this was not quite one-sixth. On the other hand, these imports demand exports which are quite as considerable for the Netherlands horticulture, part of her agriculture, her cattle-breeding especially, and all industries connected with them work to a great extent, and often chiefly, for foreign buyers.

2. *General Reasons for the Increase of Prices.*

The general reasons for the rise of prices in the Netherlands were in part the same as those which prevailed in the surrounding countries. In the Netherlands the immense increase in the needs of the struggling nations caused this advance both directly and indirectly: directly, since there was a greater demand in the Netherlands markets; indirectly, because of the universal increase of seaborne freight rates and of the price standard in the world markets, etc. Enhanced prices in the first period of the War gave an opportunity for making high profits. Gradually a large portion of the population shared the resultant influx of revenue, so that they called upon the home market with enlarged purchasing power and increased needs. But since the latter received less and less from abroad, the augmented demand resulted in inflation of the circulating medium.

3. *Government Policy Regarding Prices and Supplies.*

The price policy adopted by the Government aimed, on the one hand, at keeping the inevitable rise of prices within reasonable bounds, and on the other hand, at avoiding discouragement of enterprise. Similarly, their export policy was guided by two motives: it was necessary to prevent foreign countries from draining the Netherlands by unlimited demands, but, at the same time, exportation must be permitted to a certain extent, so as to give producers an opportunity to recoup what they lost in supplying home needs. Moreover, exports were requisite in many cases in order to obtain raw materials that were needed in exchange, especially coal and fertilizers.

If we examine briefly the various phases of State intervention, we first find two laws which were dated August 3, 1914, immediately after the outbreak of hostilities, which authorized the Government to seize home stocks, to prohibit exports, and to fix prices. On that same day there appeared a long list of commodities of which exportation was prohibited, and on August 4 maximum retail prices were fixed for a certain number which were to be considered daily necessities.

Something like a panic seized economic life in the first few days of August, finding expression, *inter alia*, in a sudden rise of the prices for such commodities as grain, fodder, etc., and a pronounced decline of others, such as cattle, meat, vegetables, milk, and dairy produce. Gradually conditions were reëstablished; and in order to reopen importation despite the Order in Council, the Government signed an agreement with Great Britain by which the State controlled certain products. Afterwards, however, it was thought preferable to adopt an arrangement, under which goods were consigned to a private company, the Netherlands Overseas Trust, founded toward the end of 1914 by the coöperation of some leading banks and navigation companies, and operating under the supervision of the State.

It was also necessary to regulate exports, and to this end an organization was created in the course of the first few months of the War, by the Royal National Relief Committee, in coöperation with the Netherlands Overseas Trust, while requests concerning export-permits for certain special commodities were handled by producers' associations under the supervision of the State. At first the system worked rather satisfactorily, and in 1915 and 1916 the scarcity of commodities at home had not yet led to serious changes in prices. Nevertheless the situation gradually became more difficult in the first few years of the War, especially when, in October, Great Britain began to ration importation of grain and other foodstuffs into the Netherlands to such an extent that the needs of the Netherlands were very insufficiently supplied.

The first point concerning which the Government was obliged to intervene was the distribution of grain, and after that came coal. The endeavors of the State grew in number until in 1916 it became evident that these matters should be settled by the general Distribution Law which came into force in August. Henceforth, the inhabitants of the Netherlands lived under an extensive system of distribution of raw materials and products which, it is true, superseded a large part of commerce and caused industry to be controlled, but which, on the other hand, made it possible to divide the stocks among the entire population fairly equally and at the lowest reasonable prices. Under this machinery, the associations mentioned above were converted into State Offices. Finally, as a result of the Law of September 1, 1917, the Netherlands Export Society, commonly known as the N.U.M. (*Nederlandsche Uitvoer-Maatschappij*), was founded with the object of centralizing all exports.

Owing to measures adopted by the belligerents, the Government had been compelled to take over the importation of an ever-increasing number of commodities, but importation of the most necessary requirements had always been possible. This situation changed when Germany proclaimed unrestricted submarine warfare in February, 1917, and when, a few months later, the United States entered the War. Supplies became more and more scarce; many Netherlands vessels were seized in foreign ports under the Law of Angary; others were torpedoed on the seas; freight rates rose to exorbitant heights. In 1918, scarcely anything entered the Netherlands from across the water; and even after the armistice navigation recovered very slowly from its paralysis.

Among the steps taken by the Government to encourage the domestic production of foodstuffs, we should first mention their endeavors to promote the growing of grain, followed by efforts in behalf of other crops for the nourishment of man and beast. At the beginning, in 1916, this was done by naming "guarantee prices," at which the State would take over the crops, rates being fixed with a view to covering the cost of production and leaving a wide margin for profit. In 1917, while maintaining these prices, which were repeatedly raised as the dearth of commodities became more stringent, the Government offered bonuses for making grassland arable, these premiums differing according to the crop and its proceeds. In 1918, they went further and ordered some of the grassland to be plowed up under the provisions of a special law which was preceded by instructions regarding the limited cultivation of marketable crops and the growing of certain foodstuffs. The events of November, 1918, however, permitted this law to be carried only partly into effect.

In 1919 and 1920, the efforts of the State gradually diminished. In the first half of 1919, supplies were extremely scarce, and were transported solely for the account of the Government in chartered vessels. The Allies very slowly returned the Netherlands ships, and they went on for some time rationing imports into the Netherlands. This rationing, as regards cereals among other things, was discontinued in May, 1919; but importation of grain was not freed from governmental supervision until October, 1920.

WHOLESALE PRICES

1. *Index-Numbers.*

The extraordinary state of affairs in the Netherlands resulting from the War, and differing in more than one respect from the situation in other countries, greatly influenced the changes of the index-number of wholesale prices. The most conspicuous divergency was, that in the Netherlands the maximum was attained in 1918, though elsewhere the index continued to mount till 1920. Even if we assume that the hampering of world traffic, together with the lack of raw materials, played a prominent part, we may ask, nevertheless, why other countries, where similar conditions prevailed, showed such a different course, this applying in the first place to Denmark and Switzerland, and in the second place perhaps to Norway and Sweden.

Switzerland has no index-number of wholesale prices for the years mentioned, so that comparison is very difficult. In Denmark and Norway, the number was by far the highest in 1920. This is different, however, when allowance is made for the depreciation of the circulating medium. If one multiplies the average index-number by that part which constituted the average rate of exchange of the crown in New York with the dollar at par (a rough calculation which is sufficient for the purpose), and if one deals in the same way with the Netherlands index-numbers, one obtains the following results:

	The Netherlands	*Denmark*	*Norway*	*Sweden*
1918	431	337	393	414
1919	296	272	292	302
1920	245	219	242	256
1921	153	143	149	172
1922	153	130	138	153
1923	147	123	135	151

When the depreciation of the circulating medium is thus eliminated, the changes in the index-numbers of the neutral countries of central and northern Europe show a striking similarity, especially as regards a regular decline from 1918 to 1923.

Before making Netherlands prices the subject of further discussion, something should be said about the index-number. In the Netherlands, as in so many other countries, events subsequent to 1914, and especially after 1918, showed the necessity of a closer observation of economic life than had been the case hitherto; and this involved the need of summarized figures relating to price-changes, *i.e.*, of index-numbers of wholesale prices. Only when the slow restoration of normal conditions began to permit a survey of these fluctuations were any efforts made in the Netherlands to compile an index-number. A desire to compare post-war and pre-war conditions, the consciousness of the desirability of a rather wide basis, and the need of uniformity between the countries, as expressed by the International Institute of Statistics, led to the adoption of the period of 1901-1910 as a basis. This caused a difficulty, however, for though the Central Bureau of Statistics had regularly collected wholesale prices for a number of commodities, these were too few in number and possessed too little variety to render it possible to compile an index-number which could serve as a general price standard. It was necessary, therefore, to extend the statistics by means of items for which sufficiently reliable information was obtainable for the period from 1901 to 1910 as well as for the years during the War. It is clear that the choice was limited. This is the reason why some important things could not be included in the index-number and why, on the other hand, it comprises some articles which on second thought might better have been omitted. Yet we hope to be able to point out that these deficiencies were not so serious as to cause the index to give a wrong idea of general fluctuations in prices.

2. *The Netherlands Index-Number.*

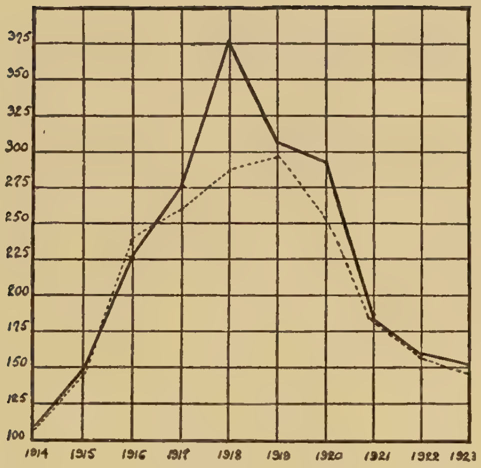
The index-number for the Netherlands is the unweighted average of the proportional figures of the prices of forty-eight commodities. Owing to lack of information on which the ratios might have been based, it was impossible to apply coefficients of importance. The prices utilized for our index-number all refer to quotations on the

Netherlands market; wherever there was a choice between similar products from the interior and from foreign countries, the former were chosen. The following table gives a summary of the variations in prices for commodities utilized in the compilation of the index-number; it also contains the index-number of twenty-eight foodstuffs, as well as the general number.

PROPORTIONAL FIGURES OF FORTY-EIGHT WHOLESALE COMMODITIES (1901-1910=100)

(The maxima for each commodity are italicized)

Commodities	*1911*	*1912*	*1913*	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Foodstuffs (vegetable):													
Wheat	107	116	107	121	169	180	228	300	*338*	297	196	139	130
Rye	104	121	104	113	160	182	266	*364*	357	311	230	147	126
Barley	114	135	117	131	185	187	233	267	*322*	288	193	141	118
Oats	107	131	110	127	198	187	252	288	*332*	280	165	160	139
Peas	164	135	101	123	207	*303*	268	294	230	189	153	174	160
Bran	102	102	81	81	150	256	256	256	*264*	220	162	136	116
Potatoes	115	115	97	91	102	134	164	161	193	211	*282*	249	133
Sago	121	119	109	117	152	174	182	249	*290*	261	200	204	154
Hay	91	86	77	114	154	200	*329*	229	328	206	175	247	135
Sugar (including excise)	112	107	100	113	119	119	119	121	186	*219*	152	124	152
Maize (La Plata)	116	109	104	144	157	215	291	*368*	346	276	181	163	154
Rice (Java)	100	100	100	110	140	193	250	280	470	*580*	236	188	180
Macaroni	102	100	126	100	144	210	419	*419*	288	230	171	135	95
Coffee	170	187	162	153	202	220	241	295	*313*	262	159	180	184
Tea	142	127	131	165	184	178	*264*	231	260	185	163	205	275
Cocoa	100	98	102	111	130	134	*213*	186	158	162	136	144	139
Pepper (black)	125	145	133	195	233	427	*621*	547	364	188	119	104	114
Margarine	122	122	127	127	134	134	146	159	183	*200*	168	159	155
Salt (fine)	100	100	102	111	120	125	166	*284*	251	213	165	157	141
Alcohol	125	132	110	103	368	*1949*	1507	1507	1343	758	301	203	191
Foodstuffs (animal):													
Beef	116	124	123	124	142	177	169	235	*292*	272	238	178	169
Veal	126	119	126	117	139	165	168	*311*	232	283	267	194	122
Pork	105	125	117	108	170	195	225	321	*415*	316	225	183	165
Mutton	86	107	107	104	125	157	143	192	241	274	*282*	229	238
Milk	111	123	125	123	136	210	228	276	*298*	279	[illegible]		
Butter	112	111	109	107	108	118	171						



Wholesale prices

——— Index-numbers of 48 principal commodities
- - - - - Index-numbers of foodstuffs, 28 commodities

(1913=100)

Commodities	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
Cheese	140	116	115	125	196	241	246	214	250	250	*266*	183	190
Eggs	110	112	115	114	160	194	228	336	332	*342*	320	239	197
Chemical Products:													
Hydrosulphide of ammonia	116	119	116	103	167	300	257	*408*	195	288	152	148	124
Textiles:													
Cotton (raw)	90	107	116	70	131	186	273	322	375	*440*	177	216	295
Hemp	82	99	102	95	145	263	576	*614*	207	160	121	116	120
Blue Holland flax	128	129	99	197	327	358	326	321	449	*793*	251	205	178
Metals:													
Silver	93	108	107	106	95	120	161	*211*	209	190	130	124	117
Iron	91	105	96	82	103	184	341	*594*	369	372	167	152	164
Tin	129	140	137	111	123	128	147	167	*188*	178	109	102	133
Building Materials:													
Wood (Swedish deal)	113	113	122	125	170	285	342	321	391	*424*	259	208	210
Bricks	100	100	100	130	130	130	148	348	313	*358*	278	261	240
Hides and Leather:													
Ox hides	111	122	162	164	187	193	251	331	*411*	335	153	139	150
Horse hides	99	99	99	101	148	171	160	160	*256*	225	122	115	114
Greased leather	94	101	110	140	174	206	297	297	*302*	296	178	167	140
Other Commodities:													
Coal	99	111	120	108	136	187	373	491	481	*549*	274	197	202
Coke	94	106	113	103	107	142	277	*688*	385	559	218	172	218
Petroleum	101	116	117	119	124	147	349	*556*	248	293	232	168	155
Turpentine	122	85	74	108	132	142	291	*578*	327	367	165	221	231
Resin	198	198	158	119	395	1383	1680	*4941*	1043	547	188	164	154
Linseed oil	174	152	104	114	174	203	267	293	*362*	356	156	173	192
Candles (stearine)	115	109	104	134	142	164	232	232	*301*	277	217	208	176
Paper (newspaper)	94	94	92	97	101	153	239	351	305	*561*	239	212	167
Index-Numbers:													
28 foodstuffs	116	119	112	120	164	256	285	319	*326*	277	206	175	158
all 48 commodities	114	117	112	119	163	254	312	*444*	338	319	199	174	164

As was to be expected, the number for 1914 showed the influence of the War to only a slight extent. It was scarcely any higher than that for 1912, and the rise as compared with 1913 was not excessive. Besides the fact that in 1914, the world was in a state of war during only five months, this slight increase is to be attributed to the circumstances mentioned. While the Government intervened at an early date with regard to several commodities (especially wheat, rye, potatoes, etc.), the congestion of other exports, such as milk, dairy produce, and meat, caused a serious fall of prices which, though short-lived, exercised a noticeable influence on the average price standard. From 1914 to 1915, however, there was a considerable rise of about 37 per cent; from 1915 to 1916, the increase was important, being over 55 per cent; from 1916 to 1917, it was only 23 per cent; from 1917 to 1918, on the other hand, it was 42 per cent. After that came a fall; in 1919 and 1920 it was comparatively slow; from 1920 to 1921 it was considerable, after which (for the time being) a minimum was reached in 1923.

Generally speaking, this was accounted for by the practically complete obstruction of international traffic in which the Netherlands found herself involved in 1918, and which caused many prices to advance far beyond the standard of the world market with which all communication had been interrupted. In 1919 and 1920, commercial connections were gradually reëstablished, though slowly at first; and this recovery was followed by a readjustment to the general standard. The commodities which soon attained it then took part in the dearth wave; but as regards certain other articles only a slight rise of prices was caused.

It may perhaps be desirable to eliminate two commodities from the index-number: the one, because circumstances caused the changes in price to exercise a much greater influence on the index than its importance deserved; the other, because government intervention drove prices in a direction which was in defiance of natural developments. To some extent, any control by the State means a deviation from the normal; but in most cases the Government was compelled either to take sufficient account of economic facts or at least to follow certain general lines when interfering with them. The commodities we now have in mind are resin and hay. The first of these, which plays only a minor rôle in economic life, gave proportional numbers which rose high above all those of all other products (nearly to 5,000), whereas the second suddenly showed, between the figures 329 and 328 in 1917 and 1919, the much lower index 229 in 1918, wholly as the result of the introduction of a maximum price which existed only a little over one year. Similar observations may, of course, be made in respect of several other commodities, but there are no others whose deviations had in any way so much influence as in the case of these two. A very considerable rise is shown by the price of alcohol in 1915-1916, but this was chiefly due to circumstances which must be classed under the head of war economics: the policy of the Netherlands Government in seeking to reserve available grain mainly for human food, and the great demands of the belligerents for alcohol for technical purposes and consumption. After this "purification" of the index-number, we find the following series:

1911	113	1918	347
1912	116	1919	223
1913	112	1920	216
1914	119	1921	200
1915	158	1922	172
1916	233	1923	166
1917	282		

In themselves the differences are of some importance, especially the peak, which became much lower in 1918; but the general character of the changes has not undergone any alteration.

If we examine the commodities which, after excluding hay and resin, are comprised in the Netherlands index-number, we shall find that the majority of them were highest in 1919; then came 1918, and finally 1920. The items which attained their highest prices in the various years during and after the War show the following changes:

1916	2	1919	16
1917	3	1920	10
1918	12	1921	3

3. *Variations in Price for Specific Commodities.*

We shall now try to ascertain the basis of these variations in price as regards the principal commodities. In the case of the two which were most costly in 1916, *viz.*, peas and alcohol, the high price of the latter was very conspicuous, ranging in 1915-1916 from 50 to 265 guilders per hectoliter (100 per cent) for reasons already stated. In 1917, methylated spirits were included in the rationed commodities, thus causing the price to fall considerably to 205 guilders. This standard, which was far below that of the world market, was maintained for a long time; but the distribution of grain, which gradually improved in 1919 and subsequent years, caused the price of alcohol to decline rapidly.

The three articles which were highest in 1917 were the colonial products, tea, cocoa, and pepper. The supplies of these and other oversea outputs had greatly decreased in 1917 and were almost discontinued in 1918. No further explanation is needed as regards the high price in 1917, and the subsequent fall was the result of strict rations and the introduction of maximum prices (tea on August 30, cocoa on December 22, 1917) ; the average consumption of tea per head of the population, which was 0.89, 0.95, 0.99 kg. respectively in 1913, 1914, and 1915, sank to 0.07 kg. in 1918. After that year, the prices of cocoa and pepper continued to fall, but those of tea rose again in 1919, whereas coffee, which was rationed at the same time as tea, reached its acme in consequence of the reëstablishment of communications. When supplies of tea and coffee arrived, the legal stipulations concerning their distribution were canceled in May, 1919, together with maximum prices; and exportation also could again take place.

In 1918, the highest amounts were, *inter alia*, charged for rye, maize, macaroni, salt, veal, sulphurous ammonia, iron, petroleum, turpentine, and coke, this being the year when the Netherlands was practically cut off from international traffic.

With regard to most of the commodities mentioned, we are able to explain why the maximum was reached in 1918. We should remember that in the case of rye, as well as of other cereals, the prices were those fetched by the home crop, which very often differ widely from those of the world market. The Government had fixed guarantee rates for cereals and certain other things, and these were so high that domestic production was bound to yield a very handsome profit.

For some time in 1919, when supplies could again reach the Netherlands, the Government retained control of them, chartering vessels and paying freights which were far below the standard in unrestricted competition. Accordingly, the four cereals which are likewise grown at home did not share in the rise for foreign cereals in the course of the first half of 1920; and when, in August of that year, grain could be imported freely, prices abroad had fallen to such an extent that only a slight advance occurred on the home market. All this seems to explain sufficiently why the Netherlands rates for cereals were at their zenith in 1918 and 1919. Unlike other cereals, the price of rye reached its maximum in 1918, presumably as the result of the high guarantee which the Government had promised for it. The reasons for the fall in the price of maize in 1918-1919, which continued in 1920 and the years following, were, in the first place, the renewed supplies through the intervention of the Government and, later on, when it could again be imported freely, the many offers from countries where the rate of exchange was very low. The high price of macaroni may be explained by the presence of great numbers of foreigners who were regular consumers of this foodstuff, which had previously been used very little in the Netherlands. In 1919, most of these aliens returned to their respective countries.

The fact that veal was dear in 1918 is to be attributed to the slaughter of so many calves in 1917 as a result of high prices and scarcity of fodder, which greatly reduced the number of live-stock in the country. When the supply was gradually taken up again, the live-stock slowly increased, this being the reason why beef reached its maximum one year later, in 1919.

Salt was supplied to the Netherlands by Germany. Since on the other side of the frontier large sums had to be paid for permits, to which was added the expense for control in the Netherlands as regards the consumption of imported salt, a rise in price was inevitable. After the conclusion of the armistice, the duties were gradually lowered, the control was discontinued, and immediately there was a gradual fall in cost. The scarcity of fertilizers, which is expressed by the advance in the price of sulphurous ammonia, decreased rapidly in 1919, especially as regards nitrogenous fertilizers, owing to the liquidation of German war stocks at comparatively low rates.

Iron and steel, which are not extracted in the Netherlands, were not imported in 1917 and 1918, even in the shape of manufactured articles. In 1916, the Government had to draw up an inventory and to fix maximum prices, which had frequently to be raised, however, until in the end they were much higher than those in the countries of production. In 1919, importation was again possible, though only to a very insignificant extent; but even this reduced prices tremendously, and in June it was possible to discontinue rationing. The important fall of prices in Germany, which, as in pre-war times, was the greatest source of supplies for the Netherlands, and which, in 1920 especially, resumed the place necessarily surrendered in 1919 partly to Great Britain, the United States, and Sweden, approximately nullified the rise in these latter countries in 1920, thus causing only a slight increase in the Netherlands in 1919 and 1920.

As regards petroleum, imports had seriously decreased in 1917, only a very small quantity arrived in 1918, and the cost was extremely high, being several times as much as before the War, despite rationing and the fixing of prices. The rise was far greater than either in the producing countries or among the nonproducing belligerents, all of whom had larger or smaller oil-fields at their disposal. Yet when one compares the advance in the Netherlands (0.415 per liter in the wholesale trade) with that in Switzerland (0.80 franc in the retail trade), one finds that the difference was not so very wide. In Denmark, the proportional figure for oil was somewhat higher than for the Netherlands, 583 : 556; but the price was a little lower, being kr. 0.49 per kg. In 1920, there was another rise in the Netherlands in connection with the international advance in the price of oil.

The fact that coke was dearest in the Netherlands in 1918, but coal, on the contrary, in 1920, was probably due to the peculiar position of the Netherlands as regards mineral fuel, as well as to the general situation. The output of coal in the Netherlands increased greatly during the War, while industrial activities strongly diminished. Although the need of fuel was very badly felt in 1918, as shown, for instance, by the intensified extraction of such inferior combustibles as peat and lignite, yet the Netherlands was no longer entirely dependent upon other countries, as far as coal was concerned. In 1917, the imports amounted to about 84 per cent of the domestic output; in 1918, when they were only about half those of the previous year, they were not more than 35 per cent. As regards coke, the position was very different. Gas coke is practically the only form produced in the Netherlands, so that nearly all her industrial coke was necessarily bought abroad, thus accounting for the high prices of 1918. Taking into account the temporary depreciation of the guilder in 1920 and 1921, the price of coal also reached its maximum in 1918. For turpentine likewise, the high rate of 1918 was due to the complete blockade of the Netherlands.

In 1919, when there was some possibility of renewed imports, many prices began to decline, while others continued to mount. The number of commodities which fetched the highest prices in 1919 was greater in 1918, but they never attained the level of that year. Connections with the world market had been restored, though at first they were very deficient.

As regards dairy products, the price of cheese rose not only in 1919, but also in 1920, reaching its acme in 1921. In the case of milk and butter, the great diminution of live-stock and the insignificant initial imports of fodder led to a greater scarcity of milk than in any of the preceding winters during the course of the War; and the daily ration was reduced to one-tenth of a liter per head. At first, the exportation of butter and cheese remained strictly limited, but toward summer a little more liberty was allowed. The low rates of exchange in various countries, to which the Netherlands exported, gradually caused the prices of butter to decline, but shipment of cheese was hampered by the maximum price which still existed in England, thus explaining why, on the whole, the rate for butter fell in 1919 and 1920, whereas that of cheese continued to rise. The cost of milk, which is determined by the price of butter and cheese, remained high; yet it was possible, thanks to a gradual increase in production, to charge less in the winter of 1919-1920 than in the winter previous.

The high costs of pork, as compared with those in 1918, may be accounted for by the fact that the Government, having regulated industry and prices during the War, gradually withdrew its supervision when fodder again began to be imported; with the result that prices could be readjusted to a certain extent in accordance with the international market.

When, later on, pork was less needed in those countries to which the Netherlands exported it, primarily Germany during the course of the War, it was impossible to charge the same high prices as in the first half of 1919. In 1920, most commodities could again be exported and imported freely. Exports were still controlled with regard to only a few of them, and the fluctuations in price now followed chiefly those of the international market.

RETAIL PRICES

1. *Conditions Governing Retail Prices.*

Thus far we have dealt exclusively with wholesale prices and their index-numbers, this being the information most suitable for investigation as to the objective purchasing power of money, though not for an idea of what consumers must pay for the various commodities. For this, the statistics of retail prices furnish, to a certain extent, the necessary indications, and in a sense they must even be considered indispensable whenever there is a lack of data concerning the cost of living, *i.e.*, figures which show the changes in normal family expenditure owing to variations in price.

When we examine retail costs in the course of the crisis-period, we should bear in mind that the authorities fixed maximum rates for various foodstuffs and other commodities for domestic purposes. In the later years of the War, when stocks were exhausted, the Government was compelled to ration many of these things, the result being the Distribution Law which has already been mentioned and which came into force on October 1, 1916. Its main stipulations were as follows. When the Government undertook to see that the country kept in stock sufficient quantities of the commodities which were to supply the daily needs of the population, the municipalities were charged with this task. They were to purchase the required articles in those places where they were available, and they were then to place them at the disposal of their people for less, on the whole, than what had been paid for them. Maximum prices were fixed by the Government both for the purchases made by the municipalities and for their distribution to wholesale and retail dealers. So long as the municipalities did not exceed the rate fixed by the Government, the latter assumed nine-tenths of the loss suffered by the former. Maximum prices were then fixed, so far as distribution could be managed, either by the Government or through the intervention of commerce. In cases where the entire available stock was not required for such distribution, the remaining quantities of certain commodities could be freely sold, this being done, for the most part, by virtue of an agreement with the producers or the importers in the Netherlands.

2. *Statistics Regarding Retail Prices.*

We may now give a few figures. The first schedule shows the proportional retail prices for a number of articles for consumption held by the coöperative Societies of *Eigen Hulp* at Amsterdam, Haarlem, Arnhem, Utrecht, Leeuwarden, and The Hague, this information being collected by the Central Bureau of Statistics. It was ex-

PROPORTIONAL FIGURES OF RETAIL PRICES AT AMSTERDAM, HAARLEM, ARNHEM, UTRECHT, LEEUWARDEN, AND THE HAGUE (1893=100)

Commodities	*1913*	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Beans (brown)	154	157	175	214	136	111	146	236	221	286	221
Beans (white)	166	172	200	259	338	221	238	331	248	286	231
Peas (marrow)	150	153	178	192	236	211	217	208	228	219	192
Peas (gray)	125	139	157	177	220	191	209	248	250	207	205
Peas (green)	157	143	160	203	140	103	130	190	183	190	173
Groats	113	123	142	161	135	123	197	216	210	171	152
Groats (buckwheat)	104	117	171	200	292	312	292	367	296	221	175
Groats (oats)	103	103	137	150	147	120	120	200	197	193	177
Cheese (Leyden)	140	140	160	179	221	207	253	286	279	209	207
Cheese (Gouda)	124	125	133	123	126	177	195	221	246	204	204
Coffee	94	88	91	101	118	174	169	154	128	125	130
Margarine	96	99	102	110	122	136	148	161	141	129	126
Flour (rye)	85	85	104	130	144	130	130	231	156	..	..
Flour (wheat)	124	129	159	159	212	224	259	353	229	159	153
Flour (buckwheat)	105	114	152	195	324	362	314	352	295	210	167
Oil (butter)	94	101	127	149	235	409	381	271	174	148	146
Oil (rapeseed, refined)	135	141	207	228	293	351	446	446	280	264	215
Oil (rapeseed)	136	137	188	208	329	540	519	395	227	210	196
Rice	116	116	112	122	125	122	169	328	184	141	134
Soda	83	83	117	283	267	417	283	417	183	150	133
Starch	103	107	130	160	320	680	577	343	210	147	133
Treacle	100	100	125	154	179	193	200	207	189	154	132
Sugar (wet)	89	91	107	115	116	120	147	218	158	122	136
Sugar (refined white)	..	..	..	..	..	..	..	..	..	..	..
Sugar (refined)	85	89	97	100	103	103	121	175	125	100	116
Tea	112	113	117	120	127	119	139	137	123	127	147
Vermicelli	121	124	203	207	272	266	300	338	290	214	169
Soap (white Bristol)	100	100	119	126	160	183	191	153	147	117	..
Soap (soft)	87	87	121	158	121	117	275	321	142	146	150
Salt	80	80	90	90	110	190	160	160	130	120	120
Average proportional figures: 1893=100	113	116	141	165	195	228	239	264	202	177	164
1913=100	100	103	125	146	173	202	212	234	179	157	145

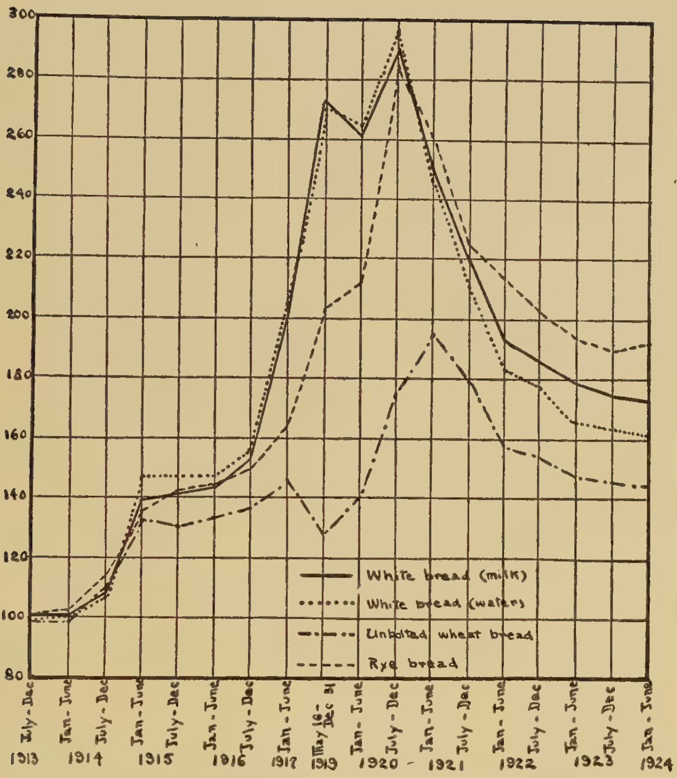
ceedingly difficult to keep the figures of retail prices up to date; in the first place, because of the fixing of maximum prices; secondly, because certain qualities of items were replaced by others; and thirdly, because in many instances a commodity was no longer obtainable in commerce, either because the stock had been exhausted, or because it was held back for profiteering.

The Amsterdam Statistical Office gathered a number of retail prices for the necessities of life in that city and with their help compiled the following index-numbers. Since this table contains no information about one of the indispensable foods, *i.e.*, bread, the Central Bureau of Statistics collected information on this matter, in places with more than 10,000 inhabitants. Whereas the average price of so-called "milk bread" was almost 15 Netherlands cents per kg., in 1903 and nearly 17½ cents in 1913, during and after the War it rose to 50½ cents.

A survey of the changes undergone by the prices of bread is given by the following index-numbers, shown by the diagram accompanying them.

INDEX-NUMBERS OF THE PRICES OF BREAD, BASED ON RETURNS OF BAKERS IN TOWNS OF MORE THAN 10,000 INHABITANTS (1913=100)

	Milk bread	*Water bread*	*Unbolted wheat bread*	*Rye bread*
July-Dec., 1913	100	99	99	99
Jan.-June, 1914	100	100	99	100
July-Dec., 1914	108	107	109	113
Jan.-June, 1915	139	147	132	126
July-Dec., 1915	141	147	130	131
Jan.-June, 1916	143	147	134	134
July-Dec., 1916	153	156	137	150
Jan.-June, 1917	200	205	146	165
May 16-Dec. 31, 1919	273	270	128	203
Jan.-June, 1920	262	264	140	211
July-Dec., 1920	291	297	175	285
Jan.-June, 1921	250	245	195	261
July-Dec., 1921	219	210	179	224
Jan.-June, 1922	193	183	157	214
July-Dec., 1922	187	178	155	204
Jan.-June, 1923	178	167	147	195
July-Dec., 1923	175	164	146	190
Jan.-June, 1924	174	162	145	192



Index-numbers of the prices of bread

Based on returns of bakers in towns of more than 10,000 inhabitants

(1913=100)

No calculations have been made for the period between April 3, 1917, and May 15, 1919, because maxima had then been fixed for the various kinds of bread. The price of brown bread (government bread), for instance, had been set at 5 Netherlands cents per 400 grams on February 5, 1917, and that of wheat water bread (bolted) at 30 cents per kg. On February 12, the price of the latter was 12½ cents; and on April 3, 14 cents per 400 grams; from February 1, 1918, it was 35 cents per kg.; on April 16, 36 cents; on October 16, 40 cents; and on November 4, again 36 cents. Wheat milk bread cost 2 cents more per 400 grams than water bread on April 3, 1917. The ingredients used for bread baked from "government flour" were not always the same.

INDEX-NUMBERS OF RETAIL PRICES OF NECESSITIES OF LIFE AT AMSTERDAM (1913=100)

Group	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Bread	106.5	121.0	115.3	147.7	162.4	184.5	212.5	186.5	147.0	141.5
Other farinaceous food	107.1	132.7	135.3	175.7	148.1	195.9	224.7	165.9	157.1	139.0
Milk and cheese	103.0	108.7	114.5	129.9	160.0	173.0	182.7	196.0	142.0	147.7
Meat	99.6	116.6	107.0	103.7	197.6	265.5	240.5	209.0	123.5	116.5
Fats	103.8	124.1	125.7	168.4	183.6	190.0	222.0	165.2	151.0	146.5
Groceries	100.2	112.2	136.5	187.6	212.2	209.6	206.6	166.4	153.9	160.9
Rough average of all commodities	103.5	119.5	128.0	164.1	178.4	201.5	214.0	174.5	150.0	146.3
Weighted average	103.0	117.2	120.19	150.4	180.6	201.9	212.2	....	....	143.4

If we compare the index-numbers of the Central Bureau of Statistics with those of the Municipal Statistical Bureaus of Amsterdam and The Hague (for the latter detailed figures are available only for the years subsequent to 1921), we find the following three series, which are incommensurate since they differ as regards both the number and the nature of the commodities, but which, nevertheless, all show the same changes and reach their highest point in 1920.

	Six Towns	*Amsterdam*	*The Hague*
1913	100	100	100
1914	103	103.5	100 (first half)
1915	125	119.5	113.8
1916	146	128	121.3

	Six Towns	*Amsterdam*	*The Hague*
1917	173	164.1	145.5
1918	202	178.4	175.3
1919	212	201.5	234.2
1920	234	214	236.3
1921	179	174.5	217.4
1922	157	150	176.8
1923	145	146.3	159.4

3. *Relation between Retail and Wholesale Prices.*

Here we find a deviation from the course of wholesale prices. To explain this difference, we should note that the retail statistics include other commodities than those of the wholesale data, especially articles of daily consumption. Generally speaking, we may say that retail prices were perhaps influenced more than wholesale, since the Government paid the difference between the two in the case of many items.

The Amsterdam Statistical Office made an attempt to determine the margin between these two categories, a margin which, under normal circumstances, is the result of the expense for finished manufacture, packing, and distribution, together with profit in business. The researches covered the first few years after the War, *viz.*, 1919, 1920, and 1921. Owing to the lack of many stocks, and especially because of government intervention as regards the furnishing of commodities and the determination of prices which made everything abnormal, it was thought inadvisable to include the war years in the study. Being intended originally only as a first contribution to the consideration of this particular problem, the investigations covered a very few items, *viz.*, boots and shoes, textiles, fats, and groceries. The results pointed to the existence of more or less intimate relations between wholesale and retail prices; the retail curve for pure butter was even almost a duplicate of the wholesale. For the rest, it proved that in industrial production a certain time elapses before the changes of price in wholesale trade exercise an influence on retail, and, finally, that a general, continuous change shows more uniformity in retail trade than in wholesale. In the latter, the fluctuations which result from the alteration in economic life are more variable; in the former, on the contrary, they have lost much of their intensity.

COST OF LIVING

1. *Lack of Statistics of Cost of Living for the Netherlands as a Whole.*

The fact that retail tables do not enable one to form a correct idea of the influence exercised on the family budget by general changes in price led various countries to prepare statistics of the cost of living. Such data, however, do not as yet exist for the Netherlands as a whole, *i.e.*, for a number of places sufficient to give a true insight into this cost in the larger cities, the provincial towns, and the rural districts.[1] If we leave out of account special inquiries and investigations which lasted only a short time, we find that information regarding changes in the cost of living is available solely for Amsterdam and The Hague.

2. *Cost of Living in Amsterdam.*

In the second half of 1918, the Amsterdam Statistical Office continued the work formerly done by the Amsterdam Inspection of Labor first in 1917 and then in the beginning of 1918, by compiling an index-number of the cost of living based on investigations of the expenditure of a number of workmen's families during four weeks. From that time until September, 1920, the Office collected data trimonthly (in March, June, September, and December) relative to the outlay of some thirty workmen's families in Amsterdam. This material was transformed into units of expenditure by adding the corresponding expenses of these families, and by dividing the sum of each item on the budget by the number of family units, this latter conversion being obtained by counting the husband as 1, the wife as 0.9, a child in its first year as 0.15, in its second year as 0.2, and in its third year as 0.3 of an adult, 0.05 being added for each subsequent year of age. Then the various unit expenses were reckoned up, thus ascertaining the total weekly expense per family unit in the course of the time under consideration.

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[1] Some years ago, the Central Commission for Statistics presented to the Government a scheme worked out by the Central Bureau of Statistics, proposing to examine for a whole year the expenses of some 1,000 families of different degrees of material welfare in twenty-four carefully selected places in the various provinces of the Netherlands. These data would at the same time help to calculate figures of increased cost; but owing to the great expense which the execution of this scheme would involve, the project was not carried into effect.

To be in a position to make the best possible comparison of the cost of living during the years under review with an earlier pre-war period (in this case 1910-1911, when the Social Democratic Study Club in Amsterdam had collected information about the budgets of a number of workmen's families), two figures were calculated. For the first, the expenses shown by the housekeeping accounts of the families in question were multiplied for each of the investigations by a fraction indicating the relations between the old and the new price. In this way, progress was effected, so to say, toward the period which served as a starting-point for comparison. For the other figure, on the contrary, consumption coefficients for 1910-1911 were utilized, as well as pre-war prices, and a calculation was made toward the period under discussion. The results of these inquiries, which embrace all expenditures except taxes, are given in the following table:

INCREASE IN TOTAL COST OF LIVING OF WORKMEN'S FAMILIES IN AMSTERDAM IN THE YEARS 1911 TO SEPTEMBER, 1920*

A workman's family which needed in		*would have needed in 1911 for a similar way of living*	*Rate of difference since previous inquiries*	*If a workman's family had needed in 1910-1911*	*it would, if a similar way of living had always been possible, have had to spend in*		*Rate of difference since previous inquiries*
Feb.-March, 1917	128.00	100		100	Feb.-March, 1917	132.30	
August, 1917†	137.60	100	+ 7.5	100	August, 1917	141.80	+ 7.2
Feb.-March, 1918	145.70	100	+ 5.9	100	Feb.-March, 1918	165.00	+16.4
Aug.-Sept., 1918	165.90	100	+14.3	100	Aug.-Sept., 1918	183.00	+10.9
Nov.-Dec., 1918	161.50	100	— 2.6	100	Nov.-Dec., 1918	177.00	— 3.3
March, 1919	166.40	100	+ 3.0	100	March, 1918	183.80	+ 3.8
June, 1919	180.40	100	+ 8.4	100	June, 1918	194.80	+ 6.0
Sept., 1919	183.20	100	+ 1.2	100	Sept., 1919	193.10	— 0.9
Dec., 1919	200.10	100	+ 9.2	100	Dec., 1919	204.80	+ 6.1
March, 1920	213.80	100	+ 6.9	100	March, 1920	213.70	+ 4.3
June, 1920	214.60	100	+ 0.4	100	June, 1920	216.80	+ 1.5
Sept., 1920	222.10	100	+ 3.5	100	Sept., 1920	222.70	+ 2.7

* Taken from *Maandberichten van het Bureau van Statistiek der Gemeente Amsterdam.*

† In August, 1917, no new inquiries were made regarding families, but the data of February-March of that same year were utilized with the help of the prices in August.

For foodstuffs only, the proportional figures were as follows:

A workman's family spending on food in		*would have been able in 1911 to buy the same food for*	*If a workman's family spent on food in the same way of living in 1910-1911*	*it would have to spend, if the same way of living had always been possible, in*	
Feb.-March, 1917	134.90	100	100	Feb.-March, 1917	136
Feb.-March, 1918	145.50	100	100	Feb.-March, 1918	160
Aug.-Sept., 1918	164.80	100	100	Aug.-Sept., 1918	185
Nov.-Dec., 1918	165.10	100	100	Nov.-Dec., 1918	181
March, 1919	173.30	100	100	March, 1919	189
June, 1919	189.30	100	100	June, 1919	203
Sept., 1919	190.20	100	100	Sept., 1919	200
Dec., 1919	211.50	100	100	Dec., 1919	214
March, 1920	216.10	100	100	March, 1920	216
June, 1920	222.60	100	100	June, 1920	224
Sept., 1920	235.70	100	100	Sept., 1920	235

These figures show clearly that the cost of living mounted constantly till the end of the War. Then followed sudden relief, but this was only brief, for in March, 1919, life was again more expensive than it had been in September, 1918. The fall of prices was chiefly the result of a more generous distribution of comparatively cheaper government commodities, such as bread, beans, peas, and rice, after the conclusion of the armistice, as well as of placing preserved and staple vegetables at the disposal of the people.

When, in 1920, living had again acquired some stability as regards the working class, the Amsterdam Bureau thought it undesirable, for the time being, to make renewed tri-monthly inquiries into the family budget; but by applying reduction factors they simply calculated to what extent the cost of living had risen or fallen since March, 1920, this month being selected as a basis for the new series of figures. Thus the comparison with the budget for 1910-1911 was also discontinued. Nevertheless, the Amsterdam Bureau has associated the old series, which goes as far as September, 1920, with the new one, which begins in March, 1920, by making a calculation which renders it possible to compare the statistics of the new series with those of the old. Both include a figure relating to March, 1920: in the old series, it is 213.7; in the new, it is 100; and to combine the two, the value of the first must be assigned to the second, and subsequent data must be calculated again on this basis. The Amsterdam

Bureau emphasizes the fact, however, that the figures according to the old method are based on pre-war conditions, and that those of the new are founded on the mode of living in March, 1920, so that one is confronted with heterogeneous elements.

The following table contains a survey of the index-numbers through September, 1924, borrowed from the *Maandberichten van het Bureau van Statistiek der Gemeente Amsterdam:*

INDEX-NUMBERS OF THE COST OF LIVING OF WORKMEN'S FAMILIES IN AMSTERDAM

	Index-numbers based on the way of living and the price level of 1911	*Index-numbers based on the way of living and the price level of March, 1920*	*Calculated index-numbers, the rise and fall being based on the way of living in 1920 applied to index-number in the first column established for the same month*
1911	100		
Feb.-March, 1917	132.3		
August, 1917	141.8		
Feb.-March, 1918	165.0		
Aug.-Sept., 1918	183.0		
Nov.-Dec., 1918	177.0		
March, 1919	183.8		
June, 1919	194.8		
Sept., 1919	193.1		
Dec., 1919	204.8		
March, 1920	213.7	100	213.7
June, 1920		102.4	218.8
Sept., 1920		106.8	228.3
Dec., 1920		103.7	221.6
March, 1921		98.2	209.8
June, 1921		97.3	207.9
Sept., 1921		93.2	199.2
Dec., 1921		89.1	190.4
March, 1922		89.8	191.9
June, 1922		87.4	186.8
Sept., 1922		81.8	174.8
Dec., 1922		82.5	176.3
March, 1923		80.7	172.5
June, 1923		81.2	173.5
Sept., 1923		81.0	173.1
Dec., 1923		83.1	177.6
March, 1924		83.8	179.1
June, 1924		81.1	173.3
Sept., 1924		82.5	176.3

Thus we find, with the exception of a short relapse immediately after the armistice, a continuous rise till September, 1920, when living was about two and a half times as costly as it had been before the War. Then followed a fall till the end of 1921, when the index-number was 190.4. In 1922, a period began which seems inclined to sink, but with alternate rises. Between December, 1921, and September, 1923, the index-number had decreased from 190.4 to 173.1, representing a much slower decline than that of September, 1920, to December, 1921, when the number fell from 228.3 to 190.4. After December, 1923, we find another rise, interrupted by a fall in June, 1924.

The accompanying figures furnish the necessary information about the real expense for the various items in March, 1920, and September, 1924, and also record the percentages of the increase or decrease of each group since the former date.

COST OF LIVING OF

Percentage of ris

Expenses for	*Average weekly expenditure per family unit in guilders in March, 1920*	*in June, 1920*	*in Sept., 1920*	*in Dec., 1920*	*in March, 1921*
Bread, rusks, cake	1.33	3.0	13.5	2.8	—7.4
Flour, etc.	.16½	5.7	10.9	—4.8	—25.4
Milk	.63½	—3.1	16.7	33.3	33.3
Cheese	.11	12.3	34.0	26.9	43.4
Eggs	.11	11.1	50.0	83.3	—12.5
Meat	.71½	8.8	12.6	4.5	7.9
Fish	.12½	—1.5	—0.4	8.9	—18.4
Fat	.95	—1.0	12.0	7.6	—6.9
Sugar	.30	0.0	0.2	10.3	9.3
Other groceries	.36½	0.2	—4.4	—10.4	—12.5
Vegetables	.23	—2.7	11.7	17.8	54.4
Fruit	.06½	75.0	71.2	64.5	72.2
Potatoes	.46½	11.1	—2.5	10.1	12.1
TOTAL FOODSTUFFS	5.56½	3.4	11.4	10.5	4.8
Clothing	1.47½	5.9	5.2	—15.8	—27.6
Shoes	.54½	0.1	0.0	—5.8	—20.4
Rent	.84	1.1	2.2	5.9	—7.0
Coal, etc.	.14	6.4	9.2	11.6	1.8
Gas, electricity	.36	—6.6	0.5	4.1	4.1
Cleaning, laundry	.25½	—3.0	—3.9	—15.0	—21.2
Subscriptions, insurance	.37½	0.0	0.0	0.0	0.0
Papers, etc.	.36	0.0	2.2	15.6	15.6
Tobacco, cigars, drinks	.25½	—2.0	—1.1	—10.5	—10.5
Repairs of furniture	.39½	0.0	0.1	—2.2	—12.4
Recreations	.03½	0.0	0.0	0.0	0.0
Trams	.09	0.0	0.0	25.0	25.0
Miscellaneous	.58	0.0	2.6	2.0	3.1
GENERAL TOTAL	11.27	2.4	6.8	3.7	—1.8
Rise since the preceding period			+4.3	—2.9	—5.3

ITH MARCH, 1920

arch, 1920

in Sept., 1922	*in Dec., 1922*	*in March, 1923*	*in Sept., 1923*	*in Dec., 1923*	*in March, 1924*	*in June, 1924*	*in Sept., 1924*
—28.0	—32.3	—32.7	—33.4	—33.6	—33.6	—33.9	—33.4
—35.9	—38.6	—40.0	—40.0	—35.5	—32.5	—33.9	—31.6
—5.5	11.1	0.0	—8.3	5.5	—5.5	—16.7	12.8
—7.5	0.0	11.7	—1.9	—1.9	5.7	—3.8	9.4
0.0	33.3	—29.2	—20.8	41.6	—37.5	—25.0	—6.3
—32.8	—40.2	—39.8	—40.4	—40.8	—41.0	—42.8	—41.7
25.1	39.6	27.9	28.9	32.7	36.5	24.2	47.2
—23.1	—22.5	—21.7	—26.0	—23.4	—23.7	—28.6	—25.0
—15.7	—19.7	—4.4	—2.2	—4.2	—0.1	—13.9	—7.3
—16.8	—17.2	—16.8	—18.5	—17.4	—14.8	—14.7	—10.6
0.9	—1.1	1.4	25.8	20.0	54.2	8.4	2.6
—15.7	—9.2	—16.1	—5.9	58.0	62.2	68.4	8.5
—45.0	—45.9	—53.8	—22.7	—15.7	0.3	—0.4	—36.7
—22.2	—21.2	—23.4	—21.9	—17.6	—16.7	—22.0	—20.1
—44.6	—46.7	—48.3	—51.0	—51.0	—49.5	—49.5	—48.2
—37.0	—40.0	—40.1	—42.9	—43.4	—43.4	—43.1	—43.5
30.7	38.8	39.1	43.2	47.0	48.3	50.2	56.7
—20.1	—19.4	—21.0	—20.8	—22.4	—26.1	—31.5	—33.4
—19.8	—19.8	—23.8	—23.8	—23.8	—23.8	—23.8	—23.8
—28.6	—30.4	—31.9	—33.6	—33.1	—33.7	—36.8	—36.0
—0.3	3.4	3.0	3.0	3.0	2.9	2.9	2.9
21.5	24.8	25.1	25.1	25.1	24.1	23.5	21.5
—1.6	—1.7	—15.4	—24.5	—24.8	—24.6	—24.6	—25.1
—23.5	—25.2	—29.6	—30.6	—31.3	—31.5	—30.5	22.0
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
12.9	12.9	12.9	12.3	12.9	12.9	12.9	12.9
—4.8	—5.3	—6.1	—6.0	—8.7	—8.0	—9.9	—10.6
—18.2	—17.5	—19.3	—19.0	—16.9	—16.2	—18.9	—17.5
—6.4	+0.9	—2.2	—0.2	+2.6	+0.8	—3.2	+1.7

This table indicates that the price of bread fell pretty regularly, and the same was true of groats, beans, etc. A sharp decline is shown for March, 1921, a rise from the end of 1923. Following the first advance, the price of milk sank again after the end of 1921; but cheese and eggs at first remained very dear. Meat gradually grew cheaper; in September, 1924, it was more than 40 per cent below the price in March, 1920. Fish, however, has become very costly during the last few years. The prices of fat have slowly fallen; in September, 1924, they were about 75 per cent of what they had been in March, 1920. Sugar has been rather variable; in September, 1924, it was only 7.3 per cent cheaper than in March, 1920. Vegetables and fruit were especially dear in 1921 and the first half of 1922. Potatoes, the cost of which fluctuates with the weather, showed the most changeable prices. Foodstuffs as a whole were highest in September, 1920, when it was necessary to add 11.4 per cent to the price paid in March, 1920. After that, the expenditure for food fell until March, 1923, when it was 23.4 per cent less than in March, 1920, while in September, 1924, it was 20.1 per cent less.

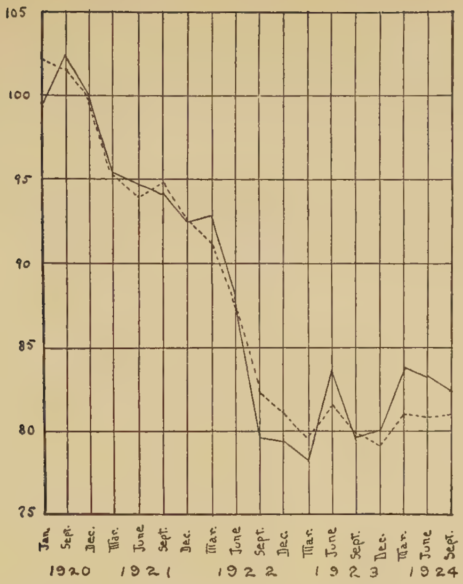
The cost of clothing has steadily declined, except for a slight rise in the course of 1923. In September, 1924, it was about half what it was in March, 1920. As regards shoes, too, the price gradually fell till they were 43.5 per cent below that of March, 1920. We likewise find slowly decreasing expenditures for fuel, gas, and electricity, cleaning, laundry, and the repair, etc., of furniture. An insignificant rise is found for the last few years in insurance and other premiums, as well as in amusements, a somewhat more important advance for tram fares, and a rather considerable increase as regards subscriptions and periodicals; in 1922 and 1923, this increment amounted to one-fifth and one-fourth respectively, as compared with March, 1920.

Although in September, 1924, the price paid for food was 20.1 per cent below that paid in March, 1920, yet the total of all other expenses was only 17.5 per cent less. An important factor among these latter is house rent, which rose continually, and for which it was necessary to pay in September, 1924, 56.7 per cent more than in March, 1920.

3. *Cost of Living in The Hague.*

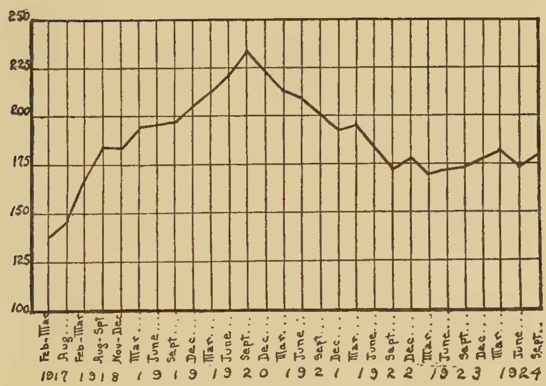
In considering these index-numbers it should be remembered that they relate only to workingmen; and though the Amsterdam Statistical Office is now collecting information about the budgets of officials, including those in the highest positions, the results have not yet been made public. Statistics relating to the cost of living for officials are regularly published by the Municipal Statistical Office of The Hague; but these officials are only subordinate, and not of the highest rank. The Bureau began the collection of such data in 1920, the method applied in gathering and preparing this matter being mainly the same as in Amsterdam, though it includes taxes. A calculation is made every three months of the weekly expenditure per family unit in case the sums paid relate to the same commodities and quantities as in December, 1920.

The following table shows the rise and fall of the cost of living for workingmen and officials and their families at The Hague from January, 1920, to September, 1924.



Index-numbers from January, 1920, to September, 1924
Total cost of living at The Hague
(*December*, 1920=100)

——— workmen's families
- - - - - officials' families



Index-numbers from February-March, 1917, to September, 1924
Total cost of living for workmen's families at Amsterdam
(1911=100)

	Workingmen				*Officials*			
	Food and drink		*Total cost of living*		*Food and drink*		*Total cost of living*	
	Index-number	*Rise or fall in percentage since preceding period*	*Index-number*	*Rise or fall in percentage since preceding period*	*Index-number*	*Rise or fall in percentage since preceding period*	*Index-number*	*Rise or fall in percentage since preceding period*
920								
anuary	98.6		99.4		100		100.2	
eptember	102.2	3.7	102.3	2.9	101.2	1.2	101.8	1.6
ecember	100	—2.2	100	—2.2	100	—1.2	100	—1.8
921								
arch	97.5	—2.5	95.3	—4.7	99.8	—0.2	95.3	—4.7
une	101.6	4.2	94.9	—0.4	101.1	1.3	94.0	—1.4
eptember	98.6	—3.0	94.1	—0.8	101.5	0.4	94.8	0.9
ecember	95.6	—3.0	92.4	—1.8	96.4	—5.0	92.6	—2.3
922								
arch	98.6	3.1	92.9	0.5	98.1	1.8	91.3	—1.4
une	90.0	—8.7	88.1	—5.2	90.2	—8.1	87.6	—4.1
eptember	71.8	—20.2	79.6	—9.6	76.4	—15.3	82.4	—5.9
ecember	71.0	—1.1	79.4	0.3	74.6	—2.4	81.2	—1.5
923								
arch	70.5	—0.7	78.2	1.5	74.0	—0.8	79.8	—1.7
une	82.8	17.4	83.6	6.9	82.0	10.8	81.7	2.4
eptember	74.2	—10.4	79.5	—4.9	75.4	—8.0	79.7	—2.4
ecember	74.8	0.8	80.0	0.6	75.7	0.4	79.1	—0.8
924								
arch	83.1	11.1	83.7	4.6	82.1	8.5	81.0	2.4
une	82.7	—0.5	83.1	—0.7	81.0	—1.3	80.8	—0.2
eptember	80.8	—2.3	82.3	—1.0	81.2	0.2	81.0	0.2

The expenditure runs fairly parallel for workingmen and officials alike; both groups usually show either a rise or a fall in one and the same period, though perhaps not to the same extent. In September, 1924, the total cost of living had decreased 17.7 per cent for men and 19 per cent for officials. Consequently, the diminution was a little less pronounced at The Hague than at Amsterdam, where it was 20.5 per cent in that same period. The cost of living is similar in Amsterdam and The Hague as regards an upward or downward movement, and the accompanying diagrams may serve to illustrate observations.

Finally we may give some statistics which show how far the War compelled the people of the Netherlands to restrict their consumption of certain important commodities.

CONSUMPTION OF CERTAIN FOODSTUFFS, ON AN ANNUAL AVERAGE PER HEAD OF THE POPULATION

	1912	*1913*	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Wheat (hectoliters)	1.51	1.56	1.36	1.84	1.80	0.84	0.43	1.21	1.28	1.44	1.35	1.49
Barley (hectoliters)	0.47	0.57	0.49	0.33	0.22	0.22	0.12	0.46	0.10	0.47	0.46	0.74
Buckwheat (hectoliters)	0.08	0.07	0.04	0.05	0.05	0.02	0.01	0.04	0.03	0.03	0.03	0.04
Rice (kilograms)	8.69	14.03	6.48	6.66	7.27	7.70	....	2.90	3.19	10.64	8.64	11.03
Potatoes (hectoliters)	4.25	3.46	3.67	4.16	3.64	5.81	6.34	5.08	3.74	2.62	6.07	2.89
Coffee (kilograms)	7.75	5.78	6.35	4.32	4.36	2.96	1.61	2.80	5.60	5.10	4.53	6.09
Tea (kilograms)	0.91	0.89	0.95	0.99	0.76	0.82	0.07	1.31	1.23	1.43	1.38	1.80
Sugar* (kilograms)	15.49	16.24	16.05	16.76	19.00	21.08	25.92	23.98	23.77	24.12	25.58	25.07
Salt (kilograms)	10.15	10.51	10.50	11.82	11.67	13.98	15.20	8.61	11.44	10.09	10.43	9.77
Beer (liters)	27.45	28.89	27.77	27.59	26.84	....	10.77	13.46	17.61	25.31	25.95	25.80
Wine (liters)	1.29	1.27	1.12	1.13	1.15	1.24	1.20	0.80	1.23	1.46	1.73	1.42
Alcohol† (liters)	5.28	5.23	5.57	4.51	4.75	4.98	3.23	4.25	5.16	2.90	2.88	2.43

	1912	*1913*	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Meat (kilograms)	15.48	15.21	15.91	....	....	....	....	15.80	16.76	16.91	20.76	19.37
Tobacco (kilograms)	2.84	3.51	2.96	2.07	2.47	2.99	1.33	2.97	4.62	3.77	2.78	3.12
Currants (kilograms)	2.09	1.79	1.76	1.69	0.46	0.10	0.0006	0.91	0.99	1.66	1.53	1.60
Raisins (kilograms)	0.75	0.84	0.47	0.37	0.05	0.02	0.002	0.39	0.37	0.58	0.48	1.15
Figs (kilograms)	0.17	0.12	0.11	0.07	0.05	0.03	....	0.10	0.46	0.43	0.35	0.27

* Excised quantity in kilograms of 100 per cent content.

† Excised quantity in liters of 50 per cent content.

WAGES

1. *Rise of Wages and Labor Shortage during the War and after the Armistice.*

Generally speaking, wages have gradually risen in the period 1914-1921, except for a brief standstill in the first period of uncertainty following the outbreak of the War. When there was a shortage of raw materials, and when available stocks of provisions were approaching exhaustion, so that prices went higher and higher, the money earned was insufficient to procure the necessities of life. Those who received the lowest amounts naturally were the first to be affected by this increase of prices, and this partly explains a phenomenon manifested in nearly all branches of industry, as well as in public administrative services, namely, that the wages of the unskilled workmen rose more than those of the skilled, since the latter were considered to be able to hold out longer on account of their higher earnings.

Just at first, wages were raised by bonuses; but when the War lasted longer than had been expected, and the prices continued to increase, it became customary, at the instigation of the employees, to fix higher standard wages, scales, and regulations. In this period labor conditions were incorporated in national collective bargains more than had been the case hitherto. This augmentation of wages should not, however, be attributed exclusively to the enhanced cost of living. In the course of this critical war period many establishments enjoyed a certain measure of prosperity in consequence of absence of foreign competition, government orders, etc.; and this was also the case with the newly created war industries.

The situation gradually caused a shortage of labor, both skilled and unskilled, as well as of office employees. The guarantees demanded by the struggling powers for exclusively domestic consumption of the commodities which they placed at the disposal of the Netherlands required a great deal of administration, not only for the organizations through whose intermediation the goods were ordered and obtained, but also for the enterprises themselves. The personnel required for the ever-growing distribution of provisions and other necessities of life was equally numerous; there was an increase in the staffs of officials for the execution of various new laws, such as those governing rent, invalidism, and old age; and the mobilization of the army and the fleet prevented a host of men from devoting themselves to their usual occupations. All this explains why the shortage of labor was often very badly felt, and why wages continued to rise.

Then followed the armistice of 1918. The Revolution in Russia and Germany had inevitably influenced the mentality of some of the workmen in the Netherlands, where there was danger of an uprising in November, thus explaining why wages advanced on the whole rather unexpectedly and in many cases much more considerably than had been the case since 1914. While this increase had been, thus far, less important in the main than that of the cost of living, in 1919 and subsequent years there was, as we shall see,[2] a change of proportions which placed the workman in a more favorable financial position than he had enjoyed in pre-war times. Moreover, the hours of labor were shortened, in most cases without any reduction of the weekly income, thus causing hour-wages and scales to be raised. In the Netherlands, the forty-five-hour week was enforced by law in 1919, contrary to the forty-eight-hour week in other countries; and this naturally resulted in an increase of personnel in many private concerns and State services, as well as on the railways.

2. *The Period of Disillusion.*

Generally speaking, it may be said that wages reached their highest point in 1921, although in agriculture this occurred as early as 1920. Disillusion followed after the few years of seeming prosperity in which commerce and industry, set free from the many constraints which had fettered them, had made great profits and had seemed to satisfy all demands. Expectations were baffled as early as 1920; before the beginning of 1921 the state of depression became more and more general, and increased alarmingly. So far as the Netherlands was concerned, the high rate of exchange played a prominent part, both because of the great difficulties resulting from it as regards exports, and because of its equally serious consequences in promoting ever-growing foreign competition, since other countries possessed sufficient supplies of raw materials and coal.

Unemployment gradually assumed proportions hitherto unknown; employers began to complain of high wages and short hours of labor.

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[2] See below, p. 337.

Then the former went down, and the latter were lengthened, but this was less easy than the reverse process. In 1922, owing to a strong protest from the workingmen, the Labor Act was modified, so as to raise the number of hours from forty-five to forty-eight, and to make it easier for employers to secure permission for overtime work. The latter tried to obtain an increased number of hours of labor, but the employees resisted, for, like their comrades in other countries, they regard the eight-hour day as a precious possession which nothing can induce them to surrender. In a resolution, adopted September 11, 1923, by the Netherlands League of Labor Unions, the central organization which adheres to the *Fédération Syndicale Internationale* at Amsterdam, the forty-eight-hour week is called the most valuable reformation won, thanks to the power of the labor movement. It is also termed essential to the cultural and intellectual development of the working classes who are invited to express their unshakable will as regards its maintenance in the Netherlands, and to introduce it wherever it is not yet in force. On the other hand, it proved impossible to attain the desired coöperation with the two denominational and neutral organizations.

The following table will show that, whereas in 1919 and 1920 respectively 82 per cent and 88 per cent of all strikers and locked-out workmen were involved in controversies connected with the raising of wages, in 1921 and 1922, 71 per cent and 64 per cent respectively were engaged in disputes against their reduction.

	Total disputes from all causes	*Raising of wages*		*Reduction of wages*	
		Number	*Percentage*	*Number*	*Percentage*
1919	61,700	50,500	82	600	1
1920	66,500	58,600	88	1,400	2
1921	47,700	8,500	18	33,900	71
1922	44,000	6,800	16	28,100	64

We may now give certain figures which allow us to gain some idea of wages and their changes for those employed in private concerns as well as for those in State services. These serve to confirm what has already been said on the subject, and they will also give an opportunity of entering into the matter with more detail. The oldest official wage statistics, which are those of wages and hours of labor for work executed by contract on behalf of the State, enable us to see, from 1894 onward, how much more quietly wages changed before the War and what commotion accompanied the changes after 1914.

3. *Wages in the Building Trades.*

To give an example from those statistics which refer chiefly to workmen in the building trades, the hourly wages of a bricklayer gradually rose in the twenty years between 1894 and 1913 from 18 to 27½ Netherlands cents, *i.e.*, a little over one-half; on the other hand, the increase in the period of 1913-1918 was approximately 50 per cent, and in the two years following about 155 per cent. The following figures confirm what has already been stated, namely, that the greatest advance took place after 1918, and that it reached its climax in 1921, the wages per hour toward this latter year being three or four times as high as in 1913. The following table gives the wages of adult workers in contract work for the State.

Average hourly wages (in Netherlands cents)

Occupation	*1894*	*1899*	*1905*	*1913*	*1918*	*Jan., 1920*	*Jan., 1921*	*Jan., 1922*	*Jan., 1923*
Bricklayer	18	18½	22	27½	43½	71	110	107	85
Concrete and cement worker	..	..	..	28½	45½	70	103	107	96
Carpenter	16½	18	20½	24	41½	65	97	100	88
House-painter	16	16½	19	22½	35½	60	86	90	90
Hodcarrier	13½	14	17½	20½	39	64	89	90	77
Navvy	14	16	16½	21½	34½	63	73	66	65
Extra hands	13	14½	16	18½	31	52	70	70	55

Proportional figures (1913=100)

Occupation	*1894*	*1899*	*1905*	*1913*	*1918*	*Jan., 1920*	*Jan., 1921*	*Jan., 1922*	*Jan., 1923*
Bricklayer	65	67	80	100	158	258	400	389	309
Concrete and cement worker	..	..	..	100	160	246	361	375	337
Carpenter	69	75	85	100	173	273	404	417	367
House-painter	71	73	84	100	158	264	380	400	400
Hodcarrier	66	68	85	100	190	312	436	439	376
Navvy	65	74	77	100	160	293	339	307	302
Extra hands	70	78	86	100	167	284	381	378	297

We should bear in mind, however, that the working hours have also been changed, and that, consequently, the weekly income has not increased to the same extent as the hourly wages. For many years before the War, the employees sought to obtain shorter time. Whereas in 1894 almost half of all contract laborers (with the exception of dredgers, who have a longer day) worked more than eleven hours, this was applicable to only 14 per cent in 1899, and in 1913 more than eleven hours hardly ever occurred. In 1918, the largest number in State employment was ten; in 1919 the forty-five-hour week was universally adopted; and in 1922, in consequence of the amendment of the Labor Act, the normal week was forty-eight hours.

Figures which give an idea of the height reached by wages in 1920 in the building trades are to be found in the report of the Commission for the examination of conditions in this industry. With the help of information from the standards of firms engaged in public and municipal buildings (schools, etc.), they arrived at the following average weekly wages earned in the last quarter of 1920 for forty-five hours of labor:

Average weekly wages of	*Amsterdam*	*Rotterdam*	*The Hague*	*Utrecht*	*Leyden*	*Arnhem*	*Delft*	*Amersfoort*	*Breda*
				(in guilders)					
Carpenters	59.40	54.90	55.25	59.40	45.23	38.43	57.86	44.68	31.92
Bricklayers	69.30	59.40	55.60	60.75	44.24	40.60	68.56	43.29	40.09
Hodcarriers	68.85	51.30	53.20	51.30	42.66	37.90	44.77	34.22	34.48
Plasterers	72.45	58.73	....	66.15	....	....	....	....	....
Painters	47.25	....	....	....	42.89	....	37.58	....	....

These statistics reveal the disproportionately high rise of payments for unskilled laborers. The wages earned by hodcarriers in Amsterdam were not even half a guilder less than those of bricklayers, and were considerably above those given to carpenters and house-painters. The figures recorded are certainly not too low; according to the Commission, we may safely presume that any deviations from the amounts actually paid inclined toward the side of generosity. In the special case of Amsterdam, information is also available as to the average hourly wages of laborers in the building trades for 1919 and subsequent years, thanks to the information which the employers' union collected there among its members. The results referring to amounts actually earned are incorporated in the following table:

Average hourly wages (in Netherlands cents)

Occupation	*1919*	*1920*	*1921*	*1922*	*1923*
Carpenter	78	104	128	123	104
Bricklayer	86	116	152	138	112
Hodcarrier	83	113	143	105	98
Carrier (bricks)	69	92	113	109	93
Carrier (concrete)	68	106	119	112	101
Cement workers	69	104	129	122	115
Metallic lather	69	111	133	124	106

Proportional figures (1919=100)

Occupation	*1919*	*1920*	*1921*	*1922*	*1923*
Carpenter	100	133	164	158	133
Bricklayer	100	135	177	160	130
Hodcarrier	100	136	172	126	118
Carrier (bricks)	100	133	164	158	135
Carrier (concrete)	100	156	175	165	148
Cement workers	100	151	187	177	167
Metallic lather	100	161	193	180	154

Here again we find a rise through 1921, followed by a decline in the years following. These figures are no indication of the fluctuations in the wages in other industries, since they were in building trades doubtless the greatest.

There was a rather speedy improvement in a situation which had been, on the whole unfavorable for building in 1914-1915 because the dubious outlook had caused timidity in private enterprise. In the first place, the Government undertook construction in various forms so as to eliminate part of the prevailing unemployment, and in the second place, municipalities and government building societies became increasingly active in counteracting the great need of houses. The labor market became more and more favorable for workmen in the building trades, and 1919 and 1920 saw a frequent shortage of labor which even resulted in the engagement of foreigners to fill up the gaps.

The main reason why such exorbitant sums were earned in the building trades is said to have been the way in which the Government, during this difficult period, made grants for constructing houses. Moreover, any deficit arising from expense of maintenance was covered entirely by the State and the municipalities, thus permitting the cost of building to rise unhindered. Subsequently, when bonuses were reduced, and when rents were adjusted to a certain extent to the cost of building, the effect of these high wages asserted itself, and laborers were heard to tax their comrades in the building trades with having contributed, through their ever-growing demands, to increase the expense of living for their fellow-workers.

4. *Wages in Other Trades.*

We may now examine the wages earned in other occupations concerning which information has been collected.

For the metal industry, excellent material is available in the statistics which have been prepared every six months since 1918 by the Normalization Office for Labor Affairs and of the Metal Employers' Association. If we compare this with the results of the inquiries made by the Central Bureau of Statistics concerning wages in 1910, we find the following figures:

	Average hourly wages		*Average weekly wages*	
	In Netherlands cents	*Proportional figures*	*In guilders*	*Proportional figures*
1910	21	100	13.30	100
1918*	39	186	21.68	163
1919*	59	281	28.26	212
1920	70	333	33.78	254
1921	77	367	36.88	277
1922	67	319	32.45	244
1923	61	290	29.25	220

* Second half year.

In this branch of industry, which is important for the Netherlands, we again notice the same phenomenon: the great rise from 1918 to 1921, followed by a fall. That weekly wages did not increase to the same extent as hourly wages was naturally because the working time had been shortened.

The following table shows that the endeavors of unskilled laborers to obtain wages as near as possible to those of skilled workers were baffled by the resistance of the Metal Union. The figures imply, on the contrary, a return to more normal proportions.

	Skilled workers (in Netherlands cents)	*Semi-skilled workers (in Netherlands cents)*	*Percentage of the hourly wages earned by skilled workers*	*Unskilled workers (in Netherlands cents)*	*Percentage of the hourly wages earned by skilled workers*
1918*	42	38	90	33	78
1919*	64	57	89	51	80
1920	77	68	88	60	78
1921	84	74	88	65	77
1922	73	64	88	56	77
1923	66	58	88	49	74

* First half year.

Figures relating to the wages earned by a special category of workers, *i.e.*, coal miners are to be found in the Reports of the Chief Engineer of Mines. We give those for the years subsequent to 1913.

	Underground workers		*Surface workers*	
	Average wages (in Netherlands cents)	*Proportional figures*	*Average wages (in Netherlands cents)*	*Proportional figures*
1913	2.95	100	1.87	100
1914	2.79	94	1.86	99
1915	2.97	101	1.94	104
1916	3.46	117	2.23	119
1917	4.03	137	2.66	142
1918	5.18	175	3.58	191
1919	6.24	211	4.30	230
1920	7.39	250	4.97	266
1921	7.14	242	4.92	263
1922	5.91	200	4.18	223

We here notice a deviation from the rule that the highest wages were paid in 1921, in that this was the case with miners in 1920. According to the Annual Report of the Chief Engineer for 1921,

WAGES (IN GUILDERS) ACCORDING TO COLLECTIVE BARGAINING IN FIVE LARGE CITIES IN 1914, 1920, 1921, AND 1923*

	Compositors				*Bookbinders*		*Carpenters*		*Bricklayers*		*Navvies*		*Plumbers*		*House-painters*	
	Hand		*Machine*													
	Minimum weekly wages	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Minimum daily wages*	*Proportional figure*	*Minimum daily wages*	*Proportional figure*	*Minimum daily wages*	*Proportional figure*	*Minimum daily wages*	*Proportional figure*	*Minimum daily wages*	*Proportional figure*
Amsterdam																
January, 1914	15.39	100	17.67	100	13.20	100	3.13½	100	3.13½	100	3.00	100	3.20	100	..	..
January, 1920	38.25	249	42.75	242	38.25	290	7.20	230	7.20	230	6.80	227	7.20	225	..	..
July, 1921	38.25	249	42.75	242	38.25	290	7.52	240	7.52	240	7.12	237	7.52	235	..	..
July, 1923	36.00	234	40.32	228	36.00	273	7.22½	230	7.22½	230	6.80	227	7.22½	226	..	..
The Hague																
January, 1914	14.82	100	17.10	100	13.20	100	2.94½	100	3.13½	100	2.80	100	..	..	2.70	100
January, 1920	37.35	252	41.85	245	37.44	284	7.20	244	7.20	230	6.80	243	..	..	6.80	252
July, 1921	37.35	252	41.85	245	37.80	286	7.52	255	7.52	240	7.12	254	..	..	7.36	273
July, 1923	35.04	236	39.36	230	35.04	265	7.22½	245	7.22½	230	6.80	243	..	..	6.80	252
Groningen																
January, 1914	13.68	100	15.96	100	..	..	2.50	100	..	..	..	..	..	..	2.30	100
January, 1920	36.00	263	40.50	254	..	..	6.64	266	..	..	..	..	..	..	6.12	266
July, 1921	36.00	263	40.50	254	..	..	6.96	278	..	..	..	..	..	..	6.64	289
July, 1923	33.60	246	37.92	238	..	..	6.37½	255	..	..	..	..	..	..	5.95	259
Haarlem																
January, 1914	14.25	100	16.53	100	..	..	2.70	100	2.70	100	2.20	100	..	..	..	..
January, 1920	36.00	253	40.50	245	..	..	7.20	267	7.20	267	6.80	309	..	..	..	..
July, 1921	36.00	253	40.50	245	..	..	7.52	279	7.52	279	7.12	324	..	..	..	..
July, 1923	33.60	236	37.92	229	..	..	7.22½	268	7.22½	268	6.80	309	..	..	..	..
Rotterdam																
January, 1914	14.82	100	17.10	100	12.54	100	..	..	..	..	..	..	..	..	..	..
January, 1920	37.35	252	41.85	245	37.44	299	..	..	..	..	..	..	..	..	..	..
July, 1921	37.35	252	41.85	245	37.80	301	..	..	..	..	..	..	..	..	..	..
July, 1923	35.04	236	39.36	230	35.04	279	..	..	..	..	..	..	..	..	..	..

	Stucco-workers		*Electricians (skilled)*		*Telephone fitters (skilled)*		*Bakers*		*Brewer's assistants*		*Gardeners*		*Mercantile marine*			
													Sailors		*Stokers*	
	Minimum daily wages	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Minimum weekly wages*	*Proportional figure*	*Standard wages per month*	*Proportional figure*	*Standard wages per month*	*Proportional figure*
Amsterdam																
January, 1914	..	..	..	..	..	..	14.00	100	..	..	14.00	100	..	..	..	..
January, 1920	..	..	..	..	..	..	31.00	221	..	..	..	..	..	..	..	..
July, 1921	..	..	..	..	..	..	37.00	264	..	..	30.00	214	..	..	..	..
July, 1923	..	..	..	..	..	..	36.00	257	..	..	22.00	157	..	..	..	..
The Hague																
January, 1914	2.85	100	18.24	100	20.65	100	13.50	100	13.50	100	..	..	..	..	..	..
January, 1920	7.20	253	36.00	197	38.40	186	31.00	230	31.85	236	..	..	..	..	..	..
July, 1921	7.52	264	42.75	234	42.75	207	37.00	274	34.50	256	..	..	..	..	..	..
July, 1923	7.04	247	38.40	211	40.50	196	36.00	267	34.50	256	..	..	..	..	..	..
Groningen																
January, 1914	..	..	..	..	..	..	12.00	100	..	..	..	..	..	..	..	..
January, 1920	..	..	..	..	..	..	29.00	242	..	..	..	..	..	..	..	..
July, 1921	..	..	..	..	..	..	35.00	292	..	..	..	..	..	..	..	..
July, 1923	..	..	..	..	..	..	34.00	283	..	..	..	..	..	..	..	..
Haarlem																
January, 1914	..	..	..	..	..	..	12.00	100	..	..	..	..	..	..	..	..
January, 1920	..	..	..	..	..	..	31.00	258	..	..	..	..	..	..	..	..
July, 1921	..	..	..	..	..	..	37.00	308	..	..	..	..	..	..	..	..
July, 1923	..	..	..	..	..	..	36.00	300	..	..	..	..	..	..	..	..
Rotterdam																
January, 1914	..	..	..	..	20.65	100	14.00	100	13.50	100	..	..	44.00	100	48.00	100
January, 1920	..	..	..	..	38.40	186	31.00	221	31.85	236	..	..	145.00	330	150.00	313
July, 1921	..	..	..	..	42.75	207	37.00	264	34.50	256	..	..	145.00	330	150.00	313
July, 1923	..	..	..	..	40.50	196	36.00	257	34.50	256	..	..	100.00	227	105.00	219

* Any allowance or bonus fixed by contract and paid in addition to the minimum wages determined by contract is included in the wages given in this table. The daily wages indicated for the various workers in the building trades for 1914 and 1920 are those paid in the summer of each of those years.

AND 1923*

Bakers		Brewer's assistants		Gardeners		Mercantile marine Sailors		Mercantile marine Stokers	
Minimum weekly wages	Proportional figure	Minimum weekly wages	Proportional figure	Minimum weekly wages	Proportional figure	Standard wages per month	Proportional figure	Standard wages per month	Proportional figure
14.00	100	..	..	14.00	100	..	..	..	..
31.00	221	..	..	..	..	..	..	..	..
37.00	264	..	..	30.00	214	..	..	..	..
36.00	257	..	..	22.00	157	..	..	..	..
13.50	100	13.50	100	..	..	..	..	..	..
31.00	230	31.85	236	..	..	..	..	..	..
37.00	274	34.50	256	..	..	..	..	..	..
36.00	267	34.50	256	..	..	..	..	..	..
12.00	100	..	..	..	..	..	..	..	..
29.00	242	..	..	..	..	..	..	..	..
35.00	292	..	..	..	..	..	..	..	..
34.00	283	..	..	..	..	..	..	..	..
12.00	100	..	..	..	..	..	..	..	..
31.00	258	..	..	..	..	..	..	..	..
37.00	308	..	..	..	..	..	..	..	..
36.00	300	..	..	..	..	..	..	..	..
14.00	100	13.50	100	..	..	44.00	100	48.00	100
31.00	221	31.85	236	..	..	145.00	330	150.00	313
37.00	264	34.50	256	..	..	145.00	330	150.00	313
36.00	257	34.50	256	..	..	100.00	227	105.00	219

ne building trades for 1914 and 1920 are those paid in the summer of each of those years.

altered conditions in the distribution of coal, etc., naturally caused prices to fall in the Netherlands; and the joint Netherlands consumers saw their expenditure for fuel decreased more than 25 million. However pleasing this may have been for the Kingdom as a whole, it put the mining industry of the Netherlands in a very awkward position. To be able to compete with foreign countries, it was necessary to find means to reduce the cost of production, and this led to a general lowering of wages as early as 1921.

We may now give a summary of earnings as determined by collective bargaining in 1914, 1920, and subsequent years. During the crisis, there were great divergencies from the regulations. It is true that work was done in times of depression for wages which were far below the norm, but these instances were not very frequent owing to the resistance of the unions. When we consider a longer period, making allowance for special circumstances, the terms agreed upon by collective bargaining may be regarded as giving a fairly accurate idea of the standard.

We may add a few figures which, according to the Labor Inspection that collected them, should be accepted only as a general indication of the average standard of wages in the leading forms of industry, and as implying a tendency to level them in most groups of occupations. We are then struck by the fact that in the various branches directly concerned with commodities of daily consumption, payments were scarcely any lower, or even higher, in 1923 than they had been in 1920, so that their reduction seems to have been rather slow as compared with those in other occupations.

		Average wages		*Proportional figure (1st half of 1914=100*	
Occupation	*1st half of 1914*	*1st half of 1920*	*Beginning of 1923*	*1st half of 1920*	*Beginning of 1923*
Manufacture of earthenware, glass, chalk, and bricks			*(Guilders per week)*		
Brickworks	12.25	26.17	20.83	214	170
Pan-tile factories	13.82	27.82	26.30	201	190
Earthenware factories	13.87	26.50	23.62	191	170
Glassworks	28.40	43.67	36.35	154	128
Diamond industry	37.58	85.61	51.09	228	136
Publishing industry					
Printing: books, newspapers, etc.	15.76	37.95	35.83	241	227
Lithography	20.58	39.80	39.12	193	190
Chemical industry	13.20	29.09	29.58	220	224
Soap factories	11.85	25.73	27.58	217	233
Oil factories	14.25	30.64	30.00	215	210
Wood and straw works					
Sawmills	12.39	28.84	29.53	233	238
Skilled workers	13.73	28.80	30.52	210	222
Unskilled workers	10.89	25.37	25.22	233	231
Carpenters' shops	13.44	35.16	38.65	262	287
Chest factories and cooperages	14.39	33.91	32.73	236	227
Joineries	17.08	36.85	36.67	216	215
Clothing and cleaning					
Tailors, etc.					
Men	12.61	27.93	25.23	221	200
Women	8.86	18.07	15.44	204	174
Linen factories	9.32	19.14	16.45	205	176
Laundries					
Men	13.43	28.90	31.31	215	233
Women	5.65	13.36	14.02	236	248
Chemical laundries and dye-houses					
Men	11.78	25.21	26.15	214	222
Women	8.47	15.24	17.90	180	211

Occupation		*Average wages*		*Proportional figure (1st half of 1914=100)*	
	1st half of 1914	*1st half of 1920*	*Beginning of 1923*	*1st half of 1920*	*Beginning of 1923*
Leather, oilcloth, and rubber industries					
Tanneries	11.08	25.15	23.60	227	213
Shoe factories	10.79	26.22	22.44	243	208
Rubber industry	14.31	27.71	25.39	194	177
Linoleum manufactory	12.10	28.00	29.60	231	245
Metallurgical		*(Netherlands cents per hour)*			
Naval construction:					
Skilled workers	28	75	68	268	243
Semi-skilled workers	25	64	62	256	248
Unskilled workers	22	59	55	268	250
Machine factories:					
Skilled workers	29	70	71	241	245
Semi-skilled workers	25	62	61	248	244
Unskilled workers	21	53	53	252	252
Paper industry			*(Guilders per week)*		
Paper mills	15.23	31.29	31.24	205	205
Cardboard factories	12.63	26.04	23.94	206	189
Textile industry					
Cotton mills	11.35	22.63	23.46	199	207
Weavers	12.57	25.15	26.07	200	207
Spinners	12.65	25.44	27.65	201	218
Spoolers	7.19	15.65	15.44	218	215
Woolen materials	11.85	28.31	24.37	239	206
Weavers	11.92	28.10	25.00	236	210
Spinners	10.49	26.81	24.25	256	231
Carpet factories	15.74	33.17	32.10	211	204
Factories for knitted goods:					
Men	11.43	25.60	25.71	224	225
Women	6.98	14.12	14.45	202	207
Worsted mills	8.35	19.75	23.58	236	282
Ropewalks	12.64	23.58	24.46	186	193
Flaxmills	9.00	22.50	16.00	250	178
Foodstuffs, etc.					
Flourmills	13.63	29.41	30.40	216	223
Rice-hulling mills	13.86	30.11	28.39	217	205
Bakeries and confectioneries	14.99	32.37	35.12	216	234
Biscuit factories	11.67	26.53	28.42	227	243
Dairies	13.75	31.50	29.56	229	215
Butter and cheese factories	12.99	25.22	26.07	194	201
Factories for dairy products	14.14	28.69	26.44	203	187
Cigar factories	12.16	30.32	25.24	249	207

	Average wages			*Proportional figure (1st half of 1914=100*	
Occupation	*1st half of 1914*	*1st half of 1920*	*Beginning of 1923*	*1st half of 1920*	*Beginnin of 1923*
Tobacco factories	11.09	29.84	30.84	269	278
Breweries	18.56	35.69	37.24	192	201
Jam and syrup factories, preserve factories (vegetables and fruit)	10.50	24.50	24.29	233	231
Potato-flour mills	10.76	24.67	19.97	229	186
Starch factories	11.53	24.97	24.06	216	209
Margarine factories	12.43	27.98	29.15	225	234
Canned-meat factories	12.23	25.93	23.24	212	190
Cocoa and chocolate factories	14.79	31.11	31.68	210	214
Chocolates and sweets factories	16.65	33.33	35.77	200	215

5. *Wages in Agriculture.*

In the case of agriculture, wages were, on the whole, allowed to advance without serious difficulties throughout the course of the War, the factors here being not only the increasing shortage of laborers in consequence both of mobilization and of the migration into the towns, where higher wages could be earned in many industrial establishments, but also the favorable financial results of the agricultural industry. According to the Agricultural Report, the rise may be regarded as 100 per cent in the period from 1914 to 1918. On the other hand, the farmers gradually limited their activities to what was strictly necessary, and this probably caused the supply of labor, in the main, to exceed the demand in 1919. Although, generally speaking, wages had not risen beyond the proceeds, such was the case in some branches of production, and these were, consequently, obliged to cope with great difficulties. This was especially true in a few departments of horticulture; in 1919, prices of vegetables were declining, and even then it could be foreseen that it would be obligatory either to lower the scale of payment or to restrict production.

In 1920, wages reached their highest point. A depression in various industries in rural districts, and the presence in the Netherlands of many men who had formerly found employment in Germany, together with a fall in the prices of agricultural products and the probability of an even lower decline, caused a superabundance of labor. Unemployment followed, and wages sank. In 1921, there was in most parts of the province of Groningen a decrease of between 7 and 10 per cent, and Zuid Beveland reported one of between 5 and 15 per cent. In piecework, the fall was even more, and wages dropped 15 per cent and 25 per cent respectively for growing and picking beetroots. As regards 1922, the further average decline may be set between 10 and 15 per cent, and it continued in 1923. Since the prices of products in 1923 differed very little, if at all, from those in 1922, the relations between the cost and the price of production became a trifle more favorable; but, on the other hand, the standard of wages in agriculture began to look very unlike that in other occupations, such as industry, where they had not fallen so rapidly.

The following survey of the annual earnings of a semi-permanently employed laborer in the agricultural district of the province of Groningen shows that in 1923 they were still twice as high as they had been in 1913:

	1913	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Wages (in guilders)	536	572	619	798	853	1,082	1,265	1,271	1,231	1,126	1,058
Proportional number	100	107	115	149	159	202	236	236	230	210	197

6. *Wages and Salaries in Civil Service.*

We now turn to the salaries and wages of those who were in the services of public administration.

Just after the beginning of the War, it was thought that officials and workmen engaged by the State, the provinces, and the municipalities enjoyed a rather favorable position as compared with those who were employed by private persons, since they had permanent situations and were sure of their salaries, even if in normal times their earnings had been regarded as insufficient. Circumstances quickly changed, however, and when wages in agriculture, commerce, and industry rose higher and higher, the services of public administration soon ranked among the worst paid. With the exception of a war bonus of 6 per cent granted to married men receiving between 900 and 1,200 guilders, depending on the group in which the town was placed, and of 5 guilders for each child under sixteen years of age, no general revision of salaries and wages of those employed in these services was made till after the War.

As regards civil servants, a general regulation was first introduced for nearly all categories in 1918, since hitherto the salaries for each class had been fixed by separate resolutions. In making the new schedules, the authorities started from the principle that the cost of living must have risen between 20 and 30 per cent above the standard of pre-war times. All civil servants were classified in accordance with a certain number of scales, and uniformity was thus obtained. In view of the different standards of living, towns were divided into five classes, the four lowest including salaries which were 16, 12, 8, and 4 per cent lower than in the highest, and an annual stipend of 800 guilders being adopted as the minimum. The full 100 per cent of the increase was not paid until January 1, 1919, though 75 per cent of it was given for the year 1918 by way of transition. Because of the further rise of the cost of living an allowance for children was added in 1919; and in October of that year, civil servants likewise received an amount which, for most of them, was equal to a month's salary plus a sum depending upon the number of their children. About the same time the Salary Decree was modified so as to reduce the number of groups from five to three, and the salaries of the first group were diminished by 4 and 8 per cent respectively on behalf of the second and third groups. The amount for which no contribution for pensions was due was raised from 400 to less than 1,200 guilders. In 1920, a new regulation was introduced. Salaries were raised, and all officials with a stipend under 5,000 guilders received an allowance for their families; but pending the revision of the Pension Acts, 7 per cent was withheld for a maximum of 3,000 guilders.

Workmen in the service of the State attained this stage of greater uniformity in labor conditions on January 1, 1920, simultaneously with the introduction of the second general regulation for civil servants. Thus far such laborers had received only war bonuses and family allowances by way of compensation. The chief points were: that they were classified in six groups according to their skill; that minimum weekly wages were fixed for each group, as well as maximum rates which could be attained after a certain number of periodical advances; that the minimum wages for one definite group were to be paid to workmen who were twenty-three years old; that three scales were established for young laborers according to their age and skill; and that places were classified in three groups, wages in the second and third classes of towns now being 4 and 8 per cent lower than in the first.

As regards male adult workmen, the minima and maxima of weekly wages (these latter to be earned after five years of service) were fixed as follows, the general basis being the forty-five-hour week, and 7 per cent being deducted for pensions:

	1st group unskilled workmen	*2nd group slightly skilled workmen*	*3rd group somewhat more skilled workmen (in guilders)*	*4th group skilled workmen*	*5th group more capable skilled workmen*	*6th group expert workmen, or those charged with some supervision*
Minimum	27.90	29.25	30.60	32.85	35.10	38.70
Maximum	32.40	33.75	35.10	38.25	40.50	44.10

As measures in favor of all civil servants, both officials and workmen, after the introduction of uniform arrangements, we may mention the cancellation of the compulsory contribution of 7 per cent as a premium for pensions and the general granting of a 2½ per cent family allowance of gross salaries for each son or daughter under eight years of age with an annual minimum of 50 guilders and a maximum of 200 per child. These stipulations came into force in October, 1920, and were retroactive to January 1 of that year. At the same time, the minimum salary for married male civil servants in towns of the first class was fixed at 1,600 guilders. Finally the annuity rights of civil servants were greatly extended under the new Pension Act which came into force on July 1, 1922. Temporary and even old hands then became entitled to pensions, the period of forty years was reduced to thirty-five, the maximum pension of 3,000 guilders was increased to 4,000, and that of widows from 800 guilders to 1,400. In case of dismissal on account of discontinuance of the post or of reorganization, a pension was granted after seven years' service, and a general minimum pension of 30 per cent of the pension bases was introduced.

It is naturally impossible to give here anything like a complete survey of the changes in the salaries and wages of all civil servants, and it must suffice to record a few figures showing the amounts earned by certain categories in 1913 and 1920, the highest wages being paid in this latter year. In examining these statistics, it should be remembered that a premium had to be paid toward pensions in 1913, whereas this was no longer the case after January 1, 1920, and that in 1913 no family allowance was granted, contrary to 1920. The salaries of officials at the Departments of State were as follows:

Civil Servants (Departments of State)

	1913			*1920*		
Occupation	*Minimum (in guilders)*	*Maximum (in guilders)*	*Years of service necessary to receive maximum*	*Minimum (in guilders)*	*Maximum (in guilders)*	*Years of service necessary to receive maximum*
Assistant clerk	600	1,200	12	1,200	2,000	12
Clerk	600	1,400	17	1,300	2,300	12
Assistant commissioner	1,200	1,900	13	2,000	3,000	10
Commissioner	1,800	2,500	14	2,800	3,800	10
Chief commissioner	2,400	2,900	6	4,000	5,000	10
Referendary	3,000	3,800	8	4,800	6,000	6
Administrator	4,000	4,800	8	5,500	7,000	6

As regards the army and navy similar measures were taken during the War.

The following figures give an idea of the rise of wages paid to workmen in State service:

	1913				*1920*			
Occupation	*Minimum (in guilders)*	*Maximum (in guilders)*	*Years of service necessary to receive maximum*	*Weekly hours of labor*	*Minimum (in guilders)*	*Maximum (in guilders)*	*Years of service necessary to receive maximum*	*Weekly hours of labor*
				Artillery Works (Hembrug)				
Unskilled workmen (23 years and older)	10.20	15.60	15	54	27.90	34.65	5	45
Turners	11.40	21.00	..	54	29.25	45.00	5	45
Blacksmith	11.40	19.80	..	54	32.85	42.30	5	45
				Government Printing Office				
Compositor	15.00	17.00	4	54	32.85	38.25	5	45
Printer								

State Forestry

	Weekly wages		*Hours of labor per day in summer*	*Weekly wages*	*Hours of labor per day in summer*
Permanent workmen:					
at The Hague		12.00	10½	31.68	10
at Schoorl	7.20	9.30	10	21.00	10

Just as at the time of the rising trend, the changes in wages paid in industry preceded those earned by civil servants during the great depression. The former, which is usually the first to experience the results of variations in the general situation, is naturally obliged to be the first to adapt itself; and though on the whole it is no easy matter for a private employer to introduce lower wages, because the workmen and their unions resist as long as possible, and because the scales have often been fixed for longer or shorter periods by collective bargaining, such a course is equally difficult for the State, as has been proved in practice, even though the Government has the power to reduce salaries.

In consequence of the War and a subsequent period of seeming prosperity, followed by serious depression, expenditure had increased alarmingly, while revenue had gradually decreased, thus upsetting totally the balance of the State's budget. The Government then thought it necessary to adopt serious measures for the sake of economy, but it was considered impossible to make both ends meet within a reasonable length of time without lowering the salaries of civil servants.

The first step in this direction was taken on January 1, 1923, when 8½ per cent was deducted as a premium for pensions; but this was applied only in part in the case of salaries of more than 3,000 guilders. From May 1, 1924, pending a new reduction to take effect on January 1, 1925, 10 per cent was taken from the salaries, though by way of mitigation only 5 per cent was subtracted in the case of married people and breadwinners, from May 1 to October 1, 1924. A new Salary Decree was introduced on January 1, 1925, which further decreased the stipends of civil servants. Thus, the amount paid to an assistant clerk fell from between 1,200 and 2,000 guilders to between 1,000 and 1,700 and for a referendary from between 4,800 and 6,000 to between 4,500 and 5,400. Bachelors could not receive the last two advances in any grade, and unmarried teachers must do without the last four. On the other hand, family allowances were raised from 2½ per cent to 3 per cent of the salary for each child; and as a transition measure it was determined that in 1925 no married civil servant should receive less than his salary as on October 1, 1924.

On January 1, 1925, a new arrangement was introduced which lowered the payments to workmen in the service of the State. Thus the minima and maxima wages of adult male workmen in the first group of towns were reduced as follows:

first group of wages from 27.90 and 32.40 glds. reduced to 24.00 and 28.80 glds.
second group of wages from 29.25 and 33.75 glds. reduced to 25.44 and 30.24 glds.
third group of wages from 30.60 and 35.10 glds. reduced to 26.88 and 31.68 glds.
fourth group of wages from 32.85 and 38.25 glds. reduced to 28.80 and 33.60 glds.
fifth group of wages from 35.10 and 40.50 glds. reduced to 31.20 and 36.00 glds.
sixth group of wages from 38.70 and 44.20 glds. reduced to 33.60 and 38.40 glds.

As in the case of civil servants, the family allowance has been fixed at 3 per cent for each child.

7. *Wages in Railway Service.*

In the Netherlands the railways are not operated by the State, but by private companies; though by an agreement concluded with the Government, all arrangements as regards wages and salaries must be confirmed by the Minister of Public Works. The railway staff, sometimes considered as semi-civil servants, has made increasing endeavors to obtain the same labor conditions as the civil servants.

During the great crisis, the needs of the railway employees were met at first by granting allowances, local extra wages, and the payment of certain amounts, equal as a rule to a fortnight's wages or salary, as well as by fixing increased wages and salaries. In 1917, a State Commission was appointed to prepare a complete revision of scales, and this led, on February 1, 1919, to the introduction of a new arrangement which gave allowances for certain cities. New arrangements as regards wages and salaries were likewise made for the railway staff which was divided into three groups: skilled, semi-skilled, and unskilled workmen. After April 1, 1919, the so-called terminating reductions for pension funds had been charged to the companies. In 1920, a family allowance was introduced; and in

1921 wages and salaries were again advanced in virtue of new stipulations regarding labor conditions. The minimum annual wages in the lowest scale were raised to 1,580.80 guilders, and the family allowance was increased to 2½ per cent of the wages for the third and each subsequent child less than eighteen years of age. No premium was then required for pensions, but towns were divided into three classes, those in the second and third being paid 4 and 8 per cent less respectively than those in the first class.

A few figures may serve to illustrate the changes of wages.

	1913		*1921*	
Occupation	*Minimum daily wages*	*Maximum daily wages*	*Minimum per annum*	*Maximum per annum*
Chief engineer S.S.*	3.50	4.25	2,137.50	3,648.00
H.S.†	2.35	3.45		
S.S.* 1st cl.	2.85	3.10		
Engineer 2nd cl.	2.35	2.85	2,016.00	2,784.00
H.S.†	2.00	3.10		
S.S.* 1st cl.	1.95	2.20		
Guard 2nd cl.	1.80	1.80	1,697.28	2,196.00
H.S.†	1.50	1.90		

* Company for the Exploitation of State Railways (*Maatschappij tot exploitatie van Staatsspoorwegen*).

† Netherlands Railway Company (*Hollandsche Yzeren Spoorweg Maatschappij*).

For the railways, too, the financial results of the last few years were unfavorable, and it was considered impossible to make both ends meet without lowering wages. Those who were first affected were the men in the workshops, whose earnings were diminished by 10 per cent after August 1, 1922. At the beginning of 1923, this percentage was changed to 7 per cent, in view of the fact that the whole personnel was required to pay 8½ per cent of their stipends toward their pensions. In the course of this same year, the number of classes of places was increased by one, the reduction for these classes being 4, 8, and 16 per cent respectively. Meanwhile, the forty-eight-hour week had been substituted for the forty-five-hour schedule, this increase of working time having been made possible by a revision of the Labor Act. The entire decrease amounted to about 10 per cent. The reduction for the lowest group of towns was changed from 16 to 12 per cent, and this regulation was to hold good till July 1, 1925.

8. *Wages in Municipal Service.*

As regards the changes of wages and salaries paid to the personnel in municipal service, it may be said, in general, that the raising of salaries, and especially of wages, as well as their reduction in times of depression, often depended upon the political composition of the council which determined labor conditions. Whenever wages were lowered, it was usually done first by increasing the hours of labor, and by introducing or augmenting the premium for pension.

Now all the larger towns, like the State, have special commissions for considering the interest of civil servants. These commissions are not, however, endowed everywhere with the same authority, the greatest being that which is exercised at present with regard to the municipal workmen at Amsterdam. The following figures, giving the average weekly income of adult workers in the principal services, show the changes in wages paid to these employees in that city in 1913-1923:

	Average weekly income* (in guilders)										
Services	*1913*	*1914*	*1915*	*1916*	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Electricity	17.17	17.07	17.12	18.83	20.94	25.39	34.14	38.50	41.00	40.00	39.00
Gas	16.62	16.67	16.75	18.41	21.32	22.72	34.20	39.00	41.00	41.50	40.50
Public works	17.52	17.65	18.25	20.09	21.12	23.31	35.50	41.50	43.00	44.00	42.50
Cleaning	16.15	16.21	16.42	18.30	19.86	21.20	31.40	36.50	38.50	38.00	36.50
Municipal printing office	17.34	16.95	17.33	18.62	21.53	24.24	36.06	39.00	40.50	40.00	39.00
Telephone	17.70	17.17	17.22	19.36	21.79	24.38	34.93	37.50	38.50	38.00	37.00
Tram	16.10	16.07	16.18	17.76	19.72	21.79	34.38	39.00	40.00	40.50	39.00
Water supply	16.66	16.92	17.10	18.71	20.22	21.65	33.35	38.00	39.50	40.00	37.50
All services together	16.53	16.50	16.66	18.34	20.40	22.33	33.77	38.00	39.00	38.50	36.50
Hours of labor per week	54	54	54	54	54	54	45†	45	45	45	48‡
Proportional figures (1913 =100), average weekly income for all services together	100	100	101	111	123	135	204	230	236	233	220.8

* The information has been taken from the annual reports of the Municipal Labor Office of Amsterdam.

† From May, 1919.

‡ From June, 1923.

The Central Consultation Bureau for Labor Problems in Employers' Unions made a comparison between the wages paid to workmen in the service of the municipality and those given to employees in a number of private concerns at Amsterdam in the second half of 1923.[3] In studying their figures, one comes to the conclusion that, on the whole, the amounts paid to municipal workmen were higher, and that the difference between those given for skilled, semi-skilled, and unskilled labor was smaller in the case of municipalities than in the case of private concerns, with the exception of the building trades.

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[3] *Economisch-Statistische Berichten,* for April 9, 1924.

Average hourly wages of adult male workmen in the second half of 1923 at Amsterdam

Industry	*Number of enterprises*	*Total*	*Numbers of workmen*			*Average hourly income (in Netherlands cents)*			*Percentage of difference as regards the hourly income of skilled workmen* *Hourly income lower than that of skilled workmen*	
			Skilled workmen	*Semi-skilled workmen*	*Unskilled workmen*	*Skilled workmen*	*Semi-skilled workmen*	*Unskilled workmen*	*Semi-skilled workmen*	*Unskilled workmen*
Building industry	65	1,015	639	30	346	103	99	95	4	8
Breweries	3	705	193	339	173	90	81	76	10	15.5
Municipality of Amsterdam.	..	8,937	2,588	4,634	1,715	89	86	82	3.5	8
Chemical industry	7	490	70	71	349	84	69	69	18	18
Ports	32	2,025	36	1,989	..	83	69	..	16	..
Electro-technical	9	83	83	..	..	82	..	..	..	..
Cooperages	3	118	36	62	20	80	75	74	6.5	7.5
Flourmills	1	182	19	73	90	78	71	65	9	17
Bookbinding	9	197	133	64	..	78	65	..	17	..
Wood	12	320	15	124	181	76	72	67	5	12
Metallurgy	16	3,898	2,130	1,128	640	75	66	58	12	22.5
Paper	1	42	9	25	8	73	66	56	9.5	23
Wire	1	161	33	114	14	69	61	57	11.5	17.5
		18,173	5,984	8,653	3,536					
Total private concerns with the exception of building industries	94	8,221	2,757	3,989	1,475	77	69	65	10.5	15.5

9. *Real Wages.*

Thus far we have dealt only with money wages. But what about real wages? Have wages risen and fallen to the same extent as the cost of living? As we have already seen, information regarding the cost of living is available only for the cities of Amsterdam and The Hague. The data relating to Amsterdam refer exclusively to workmen's families, whereas at The Hague investigations were made as regards both workmen and middle-class civil servants. Comparison with 1911 is possible for Amsterdam, but not for The Hague. If we now calculate suitable wage information as concerns municipal workmen at Amsterdam, taking into account the cost of living in that city, we arrive at the following results:

Money wages (weekly)

	1913	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Electricity	100	122	148	199	224	239	233	227
Gasworks	100	128	137	206	235	247	250	244
Public works	100	120	133	203	237	245	251	242
Cleaning	100	123	131	194	226	238	235	226
Municipal printing office	100	124	140	208	225	233	231	225
Telephone	100	123	138	197	212	217	215	209
Tram	100	122	135	213	242	248	251	242
Water supply	100	121	130	200	228	237	240	225
Cost of Living	*100*	*137*	*175*	*194*	*221*	*202*	*182*	*174*

Real wages (weekly)

	1913	*1917*	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
Electricity	100	89	84	102	101	118	128	130
Gasworks	100	94	78	106	106	122	137	140
Public works	100	88	76	104	107	121	138	139
Cleaning	100	90	75	100	102	118	129	130
Municipal printing office	100	90	80	107	102	115	127	129
Telephone	100	90	79	102	96	108	118	120
Tram	100	89	77	110	109	123	138	139
Water supply	100	88	74	103	103	117	132	129

This table shows that real wages, *i.e.*, those in which the increased cost of living is discounted, fell until the end of 1918, but that they rose after 1919. Consequently, workmen were better off from a monetary point of view, than in pre-war times. In the metal industry of

Amsterdam the rise of money wages in 1920 caught up with the augmented cost of living. Both money and real wages attained their highest point in the second half of 1921, while prices did this in the year preceding. In the first half of 1924, prices were 77 per cent above those of 1910-1911; money wages were then still nearly twice as high as in 1910, but real wages were 11 per cent more than in 1910.

Year		*Cost of living*	*Money wages*	*Real wages*
1910		100	100	100
1918	2nd half	180	150	83
1919	2nd half	197	188	95
1920	1st half	212	212	100
1920	2nd half	223	239	107
1921	1st half	213	245	115
1921	2nd half	199	246	124
1922	1st half	190	219	115
1922	2nd half	179	215	120
1923	1st half	174	206	118
1923	2nd half	175	205	117
1924	1st half	177	196	111

As regards workmen in the building trades at Amsterdam, no wage figures are available until 1919. The following tables show that for these employees also money wages and real wages continued to rise until the end of 1921. The figures prove that these workmen enjoyed a much more favorable relation between wages and cost of living in 1923 than in 1919, owing to the fact that prices had fallen more quickly than wages.

Weekly wages

	1919	*1920*	*1921*	*1922*	*1923*
Bricklayer	100	135	177	160	130
Carpenter	100	133	164	158	133
Hodcarrier	100	136	172	126	118
Cost of Living	*100*	*114*	*104*	*94*	*90*

Real wages

	1919	*1920*	*1921*	*1922*	*1923*
Bricklayer	100	118	170	170	144
Carpenter	100	117	158	168	148
Hodcarrier	100	119	165	134	131

The following figures for The Hague give rise to no special observations:

Money wages

	1921	*1922*	*1923*	*1924*
Municipal workers at The Hague:				
Gasworks	100	109	110	110
Electricity	100	112	110	111
Work done on behalf of the State by contract at The Hague:				
Bricklayer	100	100	79	..
Carpenter	100	116	92	..
Hodcarrier	100	100	76	..
Cost of Living	*100*	*92*	*79*	*80*

Real wages

	1921	*1922*	*1923*	*1924*
Municipal workers at The Hague:				
Gasworks	100	118	139	137
Electricity	100	121	138	138
Work done on behalf of the State by contract at The Hague:				
Bricklayer	100	109	100	..
Carpenter	100	126	116	..
Hodcarrier	100	109	96	..

6. SUMMARY

Although the facts and figures given in the foregoing pages may be incomplete in many respects, they show the operation of general economic laws even under the very abnormal conditions which prevailed in the Netherlands during the War and the first few years following it. Wholesale prices rise as scarcity develops. Since the Netherlands cannot in many respects be self-supporting, because of her small area and her dense population, and since she was wholly isolated in 1918, the increase in the prices of many commodities was far greater than elsewhere. As soon as communications were reëstablished with other countries, their variations in price affected those in the Netherlands, lowering such as had mounted too high, and raising those which had been artificially restricted in comparison with the world market.

Retail prices conform to wholesale, but the system of the maximum price forbade the former to attain their full evolution during the War, thus explaining why they reached their climax only after the conclusion of peace. Changes in wages are influenced at the very first by increasing scarcity and dearth, and subsequently by what appears to be the general situation. Since their rise exceeded that of the cost of living, conditions were created in 1918 which caused the ordinary workman to be better off than before the War. The approaching crisis resulted in an immediate decline of prices and wages, the former sinking more rapidly because any decrease of the latter was strongly resisted by the labor unions, which had greatly gained in power during and immediately after the War. In 1923, the year which terminates our survey, the situation seemed to have reached its lowest point so far as the Netherlands was concerned; and various symptoms pointed toward an improvement which became more evident in 1924.

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